# Underestimated hidden champion in energy storage

Therefore, besides the thermal upgrade, thermal energy storage with high storage capacities and thermal throughputs is the second starting point of our research: while sensible energy storage technology is already well established on industrial scale, e.g. in the form of regenerative heat exchangers, latent energy storage technology is catching up.

Thermal Energy Storage (TES) systems are pivotal in advancing net-zero energy transitions, particularly in the energy sector, which is a major contributor to climate change due to carbon emissions. In electrical vehicles (EVs), TES systems enhance battery performance and regulate cabin temperatures, thus improving energy efficiency and extending vehicle ...

That"s why the role of ceramics--although offering unique functionalities--is in general largely underestimated. ... are rarely considered as ceramics. For all the above-mentioned reasons, ceramics are truly "hidden champions" in this field. ... Ceramic fillers with high heat capacity are also used for thermal energy storage. Direct ...

In the global market, there exists a category of small yet sophisticated enterprises, known as Hidden Champions. These companies, despite not receiving widespread recognition in executive circles, command a significant share of the market, dominate various market segments, and emerge as leaders in global niche markets, thus playing a pivotal role in ...

hidden champions are family businesses and belong to the Mittelstand (IFM 2020a), which is why the various concepts have been likened to one another. The data sample of German hidden champions reveals that 62.3% indeed are family owned, as Table 1 illustrates. What distinguishes them from other Mittelstand and

In addition, production technology from hidden champions such as BEKO Technologies (compressed air filtration), Dürr (painting robot), Eisenmann (paint line), Schuler Group (stamping press), or Manz (robotic systems for battery production) establishes the basis for a radically automated production process of TESLA (cp. Büchler, 2022).This example already ...

Abstract The scientific community largely agrees on both the potential of as well as the need for thermal energy storage (TES) in energy-efficient industrial processes. However, state-of-the-art TES technologies (latent or sensible) have one unsolved issue in common: whenever thermal energy is transferred, e.g. between the heat transfer fluid in an industrial application and the ...

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