

A groundbreaking cement-hydrogel composite, developed by researchers in China, is turning this vision into reality. Inspired by the intricate structure of plant stems, this material harvests ...

Concentrated solar power (CSP) has emerged as a promising technology to supply the high-temperature process heat demanded by cement and power generation (Andr#233; et al. 2017; Block ...

What does cement production look like? Fuel is introduced at 2 locations, in the precalciner and the kiln. Why is cement so hard to decarbonize? What about the remaining CO<sub>2</sub> liberated from the CaCO<sub>3</sub>?

A groundbreaking cement developed by Chinese scientists can now generate electricity from heat--thanks to a bio-inspired design that mimics plant stems. By combining hydrogel layers ...

In the CemSol research project, a team of scientists is developing and demonstrating a solar-heated calcination plant to produce cement. This process produces carbon dioxide, which is ...

A conventional cement plant (Kotputli Cement Works (KCW), an UltraTech Cement Limited manufacturing unit) at Kotputli, Jaipur, Rajasthan, was investigated for solar thermal application.

Synhelion and CEMEX have produced the first solar clinker in the world. For this application, in cement production, the solar heat will be piped to a long kiln in the cement factory ...

For the first time ever, CEMEX and Synhelion successfully connected the clinker production process with the Synhelion solar receiver, producing solar clinker. This revolutionary ...

This paper reviews: (i) electrolysis-based methods to produce cement precursors, and (ii) electrified process heat technologies, along with heat storage approaches. We highlight scaled-up...

Concentrated solar thermal technology offers a path to decarbonize cement by replacing fossil fuels with 1,500°C heat and simplifying carbon capture. The discourse surrounding industrial ...

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