SOLAR PRO.

SolarTech Power Solutions

Swiss high-temperature solar system

Overview

Can solar energy deliver heat at high temperatures?

Using solar radiation, they have engineered a device that can deliver heat at the high temperatures needed for the production processes. The team led by Emiliano Casati, a scientist in the Energy and Process Systems Engineering Group, and Aldo Steinfeld, Professor of Renewable Energy Carriers, has developed a thermal trap.

Can solar power generate heat over 1000 degrees Celsius?

Cell Press. (2024, May 15). Scientists generate heat over 1,000 degrees Celsius with solar power instead of fossil fuel. ScienceDaily. Retrieved November 1, 2024 from 240515122039.htm.

Can a solar receiver transmit solar energy at a high temperature?

However, this technology has difficulties transferring solar energy efficiently above 1,000°C. To boost the efficiency of solar receivers, Casati turned to semitransparent materials such as quartz, which can trap sunlight -- a phenomenon called the thermal-trap effect.

How does a thermal trap improve solar absorption?

At higher temperatures, heat loss by radiation increases and reduces the efficiency of the plants. A major advantage of the thermal trap developed by ETH Zurich researchers is that it minimises radiative heat losses. Our approach significantly improves the efficiency of solar absorption," says Casati.

Does Trina Solar support high-temperature solar plants?

"We are, therefore, confident that this technology supports the deployment of high-temperature solar plants." 27 June 2024 Trina Solar says it has launched mass production of 430 W to 455 W full-black PV modules. The Vertex S+ panels have efficiencies of up to 22.8% and we.

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