Light absorbers for solar power generation

Abstract The study of ideal absorbers, which can efficiently absorb light over a broad range of wavelengths, is of fundamental importance, as well as critical for many applications from solar steam ...

Herein, the fundamental mechanisms and recent progress in solar selective absorbers and IR selective emitters are summarized, and their applications in water production are reported.

This work provides a straightforward and scalable approach to manufacturing high-performance light absorbers for efficient solar energy harvesting and utilization.

Solar Light Absorber (SLA 850) is an advanced solar thermal coating offering exceptional solar absorption, durability at extreme temperatures, and easy application, enabling next-generation ...

NLR"s materials discovery and design researchers work to discover new light-absorbing semiconductors and develop existing absorbers to enable technologies such as thin-film photovoltaic ...

Here we present a perfect broadband solar absorber for efficient photothermal conversion of sunlight employing a low-cost ultraviolet laser-induced graphene (UV-LIG) prepared on a polymer material ...

The typical structure of solar steam generators has a photothermal material as the light absorber that plays a vital role in the process. Thus far, different natural and synthetic kinds of ...

The results demonstrate the application potential of the pressureless-sintered ZrB 2 -SiC ceramic composites as high-temperature solar absorber in solar thermal power generation.

In this paper, we propose and demonstrate a new concept for developing a selective solar-thermal absorber from a three-dimensional (3D) structured graphene metamaterial (SGM) on metal substrates.

The breakthrough lies in a new nanostructure that is so small (measured in nanometers), yet so powerful that it contradicts most of the well-established models for how light interacts with ...

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