

Title: Solar self-generating materials

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To facilitate a broad transition to renewable energy, it is essential to actively explore various emerging materials for highly efficient and cost-effective solar cells. With the recent advances ...

To enhance optical and thermal efficiency, the design incorporates hybrid nanocoatings with self-cleaning and anti-reflective properties, along with dual-layer phase-change materials for...

Herein, we propose an energy harvesting strategy to realize self-sustaining power generation by utilizing solar and ambient energy during the daytime, radiative cooling and ambient ...

The concept of self-healing materials - inspired by natural processes like skin regeneration and photosynthesis - integrates materials that dynamically repair cracks or chemical ...

Scientists at Oxford University are coating a new solar power-generating material onto objects such as rucksacks, cars, and mobile phones. The potential of this breakthrough means that...

In this section, a spotlight on self-recovery upon moisture exposure degradation as well as after mechanical damage is given by presenting a roundup of recent relevant examples of self ...

China's researchers are moving closer to creating building materials to generate their own clean power. Luminescent solar concentrators (LSCs) are emerging as a promising solution, ...

Current and potential alternative materials for solar cells are applied in extremely thin layers, with emerging materials being the thinnest. In addition to absorbing light, solar cells must ...

Silicon-based solar cells dominate the market, but emerging materials like perovskite and organic photovoltaics offer improved efficiency and flexibility. PV generators are widely used in ...

In this study, a self-generating zwitterionic polyurethane foam (ZPF) is fabricated by grafting a silylated



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hydrolysis-induced zwitterionic telomer (Si-HIZ), further spraying TiN/PDMS on ...

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