

Can a self-luminous wood composite be used for thermal and light energy storage?

Yang et al. (2019) fabricated a self-luminous wood composite for thermal and light energy storage via impregnating a PCM/long afterglow luminescence (LAL) combination into delignified wood. However, since LAL materials applied in PCMs is very rare, thermal energy and light energy storage still have some knowledge gaps.

Can persistent luminescent phosphors store light energy in advance?

Nature Materials 22,289-304 (2023) Cite this article Persistent luminescent phosphors can store light energy in advance and release it with a long-lasting afterglow emission.

What is a persistent luminescent phosphor?

Provided by the Springer Nature SharedIt content-sharing initiative Persistent luminescent phosphors can store light energy in advance and release it with a long-lasting afterglow emission.

Do self-luminous wood composites exhibit thermal properties and luminescence performance?

The self-luminous wood composites exhibit both thermal properties and luminescence performances. However, there is not a simple sum on the capability. The addition of LAL particles can improve the thermal conductivity of self-luminous wood composites.

What are persistent luminescent materials used for?

Development of persistent luminescent materials has drawn continuous attention because of their potential applications in the fields of emergency lighting signs, dials and security displays, night-vision signage, in vivo bio-imaging, dosimetry and optical data storage 1, 2, 3.

How does self-luminous wood composite reduce energy consumption?

In addition, self-luminous wood composite has long afterglow time (about 11h), which can absorb and store visible and ultraviolet light, and release green light in the dark (Fig. 1 b). The self-luminous wood composite can store both thermal energy and light energy, thus reduce energy consumption.

The night pearl, held in high regard by ancient Chinese royalty, possessed a fascinating property of emitting light at night while remaining non-luminous under sunlight, the ...

Properties analysis of self-luminous cement-based materials with different colors and their visual comfort evaluation on pavement ... this study puts forward a reasonable method to evaluate ...

Fluorescent Green coloring luminescent pigment manufacturer. Energy storage powder, iSuoChem®; Luminous Pigment glows in the dark after absorbing different visible light and can ...

Luminous pigments is a special crystal structure of light-emitting substances, it has a very strong light-storage - luminous ability, when subjected to natural light and light irradiation, that is, ...

Overall, strontium aluminate doped with Eu \times co-doped with Dy \times (SrAl₂O₄:Eu \times , Dy \times) phosphors and self-luminous pavement for energy storage had great prospects ...

Request PDF | On Jul 1, 2023, Wentong Wang and others published Study on the mechanics and functionalities of self-luminous cement-based materials with energy storage and slow release ...

In this work, a novel self-luminous wood composite based on phase change materials (PCMs) with superior thermal energy storage and long afterglow luminescence (LAL) materials with ...

One commonly used phosphor in glow-in-the-dark products is Zinc Sulfide. This phosphor has been widely employed due to its efficient energy storage and release properties. Another popular phosphor is Strontium ...

Widely used in artificial marble, artificial Sedistone, terrazzo, aquarium disk, bonsai, swimming pool, decoration, etc. Glowing in the dark & self-luminous in the dark Super long after-glow ...