Long afterglow solar container materials

What are ultralong organic afterglow systems?
This review comprehensively summarized ultralong organic afterglow systems, encompassing not only URTP-based small-molecule materials but also extending to less-reported UTADF- and OLPL-based small-molecule materials.

What are long afterglow materials?
Recently,long afterglow materials have attracted much attention in bioimaging,emergency lighting,and photocatalysis ,,. These optically functional materialspossess delayed luminescence for several seconds or even hours,relying on stored energy after removing external excitation.

How long does a polymer afterglow last?
Flexible and transparent polymer films emitted a bright afterglow lasting over 11 hat room temperature in air,which is one of the best performances among the organic afterglow materials reported to date. Intriguingly,HLA polymer films can be activated by sunlight,and their cyan afterglow in air can be readily observed by the naked eye.

Are long afterglow phosphors used for bioimaging?
Although traditional long afterglow phosphors have been widely investigated and used in industry,and significant efforts have recently been made toward the use of these materials for bioimaging,there is to date no scientific monograph dedicated to afterglow materials.

Are ultralong afterglow materials the future of smart materials?
With ongoing optimizations in material performance and cross-disciplinary technological integration, ultralong afterglow materials are expected to emerge as a critical branch of next-generation smart materials.

Can small molecular host-guest materials achieve ultralong organic afterglow?
Nevertheless,there has been a lack of reviewson how efficient ultralong organic afterglow can be systematically achieved from small molecular host-guest materials,which is not conducive to the development of the field.

Finally, the summary, challenge, outlook, and future development direction in this field are provided. With the profound influence of the afterglow ...

Abstract Ultralong afterglow materials has special optical properties and a broad application prospect in the field of information encryption. A single ...

Organic long persistent luminescence (OLPL) materials exhibit afterglow lasting several hours. However, current strategies for constructing ...

As a new class of inorganic-organic hybrid materials with adjustable structures, high internal surface area and unique optical characteristics, Metal-Organic ...

Afterglow materials are attracting widespread attention owing to their distinctive and long-lived optical emission properties which create exciting opportunities in various fields. Recent research has led to ...

In recent years, long afterglow luminescent (LAL) materials have shown unique advantages in the field of photocatalysis, owing to their special mechanism of photoelectron storage ...

To be specific, the long afterglow luminescent material is fixed on glass sheet with reflective ability and is combined with the silicon solar cell with the excellent performance in the form ...

Visible-light persistent phosphors are being widely used as self-sustained night-vision materials because of their sufficiently strong and long ...

This book presents the fundamental scientific principles of long afterglow phosphorescent materials and a comprehensive review of both commercialized ...

This strategy allows a flexible dosage of the materials during bioimaging, facilitating the development of real-time probing and theranostic ...

In order to improve the water resistance of SrAl2O4:Eu2+, Dy3+, the composite long afterglow material Sr2MgSi2O7:Eu2+, Dy3+@ SrAl2O4:Eu2+, Dy3+ was prepared by covering ...

Abstract Long afterglow materials can store and release light energy after illumination. A brick-like, micrometer-sized Sr 2 MgSi 2 O 7:Eu 2+,Dy 3+ long-afterglow material is used for hydrogen ...

Long afterglow materials can store and release light energy after illumination. A brick-like, micrometer-sized Sr2MgSi2O7:Eu2+,Dy3+ long-afterglow material is used for hydrogen production by ...

The traps in SMS can capture and store electrons to achieve round-the-clock photocatalysis. This work expands the use of long afterglow materials and also provides a new type ...

<p indent="0mm">Long afterglow materials have attractive application prospects. However, compared with the blue and green long persistence materials, the initial strength and decay time of red long ...

The long-afterglow phosphorescent phosphors have been studied for a long time. Among them, ZnS-based materials-doped Cu or Mn were first prepared and applied in the various ...

o The epoxy resin was filled in the porous long afterglow material and improves its afterglow performance by

more than 40%. o The porous long afterglow luminescent materials provide ...

By virtue of their persistent luminescence under dark environment, the combination of long afterglow materials with semiconductors is considered a prospective protocol to maintain ...

In this case, a special storage media that can store excess photons under daylight and gradually release photons upon darkness is necessary. Therefore, long afterglow materials as a kinds ...

Abstract The application of long afterglow-based materials to the self-luminescent pavement could significantly reduce the power consumption of lighting at night and improve the traffic ...

Therefore, using silicate long afterglow materials as a substrate to composite matched photocatalytic materials may achieve steady and lasting photocatalytic effects.

Organic room-temperature phosphorescence (RTP) and afterglow materials hold great potential for various applications, but there remain inherent trade-offs between the afterglow efficiency ...

In this paper, non-rare-earth boron carbon oxynitride (BCNO) long afterglow phosphors were prepared by a rapid self-propagating combustion method. The precursor was obtained using boric acid, ...

Herein, we develop a strategy of matched spectral and temporal light management to improve photosynthetic efficiency by co-assembling natural thylakoid membrane (TM) with artificial ...

For example, Dang et al. [11] incorporated long-persistence phosphor materials into cement mortar to develop self-luminous composite materials, while Gao et al. [12] investigated the ...

Afterglow materials featuring long emission durations ranging from milliseconds to hours have garnered increasing interest owing to their potential ...

Rare-earth afterglow materials, with their unique light-storage properties, show great promise for diverse applications. However, their broader ...

Abstract Ultralong afterglow materials has special optical properties and a broad application prospect in the field of information encryption. A single afterglow color largely limits the application of afterglow ...

Most of these molecules exhibit a long triplet lifetime at low temperatures [18], which is conducive to the generation of sustained room-temperature phosphorescence (RTP). Accordingly, ...

An efficient bifunctional structured layer composed of long afterglow $SrAl_2O_4$:Eu,Dy phosphors on top of a transparent layer of nanocrystalline TiO_2 was fabricated for use in CdS quantum dot-sensitized ...

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