

Overall, strontium aluminate doped with Eu $\text{SrAl}_2\text{O}_4:\text{Eu}$, Dy $\text{SrAl}_2\text{O}_4:\text{Eu}, \text{Dy}$) phosphors and self-luminous pavement for energy storage had great prospects in improving ...

Road lane markings play an essential role in maintaining traffic order and improving traffic safety and efficiency. Active luminous lane markings have emerged with advances in technology recently. However, it is still not completely clear what impact their application will have on drivers. This paper aimed to study the effectiveness of active luminous ...

The exposure time affects the energy storage of PPRMs. PPRMs cannot be fully excited with a short exposure time. With the extension of the illumination time, more energy is absorbed by the ground state electrons, and the defect level of the phosphorescent materials is gradually saturated. The afterglow intensity reaches the best level.

Experiments were carried out in the real tunnel and the whole scale model with the sidewalls covered by the energy-storage and self-luminous material coating (ESMC) and the fireproof material coating (FMC). ... (2016) Parameters optimization and energy-saving of highway tunnel stagger luminaire distribution lighting with LED. 2016 International ...

The hardness of energy storage self-luminous plastics was between 10-100HA, which was meeting the requirements of medium hardness plastics, and could be further applied to luminous labels. The uniformity of the plastic was not affected by the addition of edible pigments, and the daytime color effect of the energy-storing self-luminous ...

Road Studs is a new type of Road Studs with super bright solar energy storage self-luminous material as the light source and constant current drive of solar energy storage self-luminous material. ... and JTT817-2011 "General Technical Requirements and Testing of Highway Electromechanical System Equipment" Methods", GBT247252009 ...

Innovations such as self-temperature regulation, self-luminous pavements (SLPs), self-sustaining energy supplies, and eco-friendly construction materials have progressively been highlighted (Sha et al., 2021; Dong et al., 2023). In particular, the emergence of SLPs is noteworthy as these are engineered to efficiently store and convert light energy.

The self-luminous markings on the Oss N329 highway in the Netherlands represent a typical application of coating-type self-luminous pavement materials. The markings can sustain luminescence for 8 h after excitation, however, due to the hydrolysis susceptibility of long afterglow materials, the functionality of this project was lost within 2 ...

The invention relates to an energy-storage luminous self-cleaning water-based paint special for a highway tunnel, which is designed by two components, wherein the component A comprises organic silicon resin, functional pigment and auxiliary agent, the component B comprises silane coupling agent and drier, and the silane coupling agent and the drier are mixed according to a ...

High efficient energy storage devices for both thermal energy and light energy are scarce in the development of modern society to reduce energy consumption. 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 excellent light energy ...

The excellent properties of the self-luminous ss-CPCMs promise them great potential in applications, such as energy-saving, emergency lighting, furniture, smart building, ...

To make self-luminous pavement, one approach is to apply coatings with self-luminous properties to the road surface. ... IoT for energy efficient green highway lighting systems: Challenges and issues. J. Netw. Comput. Appl., 158 ... Long-Lasting Nanophosphors Applied to UV-Resistant and Energy Storage Perovskite Solar Cells, Advanced Energy ...

The ss-CPCMs have a high latent enthalpy (174.33 J/g), high form stability, excellent thermal regulation abilities for both thermal energy storage and thermal insulation, ...

The composition, technical requirement of energy storage self-illuminating material, and evacuation signage are analyzed as well. ... Highway Administration of Jinhua, Jinhua. Email: jh liang xiong @163 , jhsglclsw@126 ... Identification of fire prevention and control facilities of energy storage and self-luminous system.

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Study on the mechanics and functionalities of self-luminous cement-based materials with energy storage and slow release properties. Author links open overlay panel Wentong Wang a, Wenxiu Jiao a b, ... and the specific method can refer to the specification of?Testing Methods of Cement and Concrete for Highway Engineering?in China (JTG 3420 ...

Concrete with smart and functional properties (e.g., self-sensing, self-healing, and energy harvesting) represents a transformative direction in the field of construction materials. Energy-harvesting concrete has the capability to store or convert the ambient energy (e.g., light, thermal, and mechanical energy) for feasible uses, alleviating global energy and pollution ...

SELF-CONSISTENT MICRO-NETWORK IN SERVICE AREA Optimal Configuration of Self-Consistent

Highway energy storage self-luminous

Microgrid System with Hydrogen Energy Storage for Highway Service Area Ruifeng Shi^{1, 2}, Keyi Tang¹, Kwang Y. Lee³ ¹School of Control and Computer Engineering, North China Electric Power University, Beijing, China, (e-mail: ); ...

Self-luminous pavement materials can autonomously absorb solar energy and emit light at night, offering a novel approach to improving nighttime road visibility and reducing ...

Moreover, Ag-GNS/PEG composites exhibit enhanced thermal conductivities (49.5-95.3%), high energy storage densities (>166.1 J/g), high thermal energy storage/release rates and outstanding form ...

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Downloadable (with restrictions)! Except for the improvement enthalpy value and thermal conductivity of conventional solid-solid phase change materials (SSPCMs), expansion of additional functions other than thermal energy storage function of that has been particularly attractive. In this work, a novel self-luminous SSPCMs based polyethylene glycol have been ...

DOI: 10.1016/j.solener.2023.04.049 Corpus ID: 258800180; Study on the mechanics and functionalities of self-luminous cement-based materials with energy storage and slow release properties

DOI: 10.1016/j.ensm.2019.02.005 Corpus ID: 139706386; Self-luminous wood composite for both thermal and light energy storage @article{Yang2019SelfluminousWC, title={Self-luminous wood composite for both thermal and light energy storage}, author={Haiyue Yang and Weixiang Chao and Siyuan Wang and Qianqian Yu and Guoliang Cao and Tinghan Yang and Feng Liu and ...

The sidewall material of the tunnel was made of a highly diffuse reflective material (a type of energy storage luminous material (ESL) material), and a special putty was used to ...

DOI: 10.1016/j.energy.2019.116802 Corpus ID: 214285042; Polyethylene glycol based self-luminous phase change materials for both thermal and light energy storage @article{Jiang2020PolyethyleneGB, title={Polyethylene glycol based self-luminous phase change materials for both thermal and light energy storage}, author={Liang Jiang and Yuan Lei and ...

High efficient energy storage devices for both thermal energy and light energy are scarce in the development of modern society to reduce energy consumption. 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 excellent light energy storage is reported.

Smart and multifunctional concretes have the capabilities of self-sensing, self-adjusting, self-healing, self-luminous, self-purifying, sound-absorbing, and energy-harvesting, etc., through incorporating functional



Highway energy storage self-luminous

fillers, thus recently attracting major research interests to produce new-generation pavement infrastructures.

The excellent properties of the self-luminous ss-CPCMs promise them great potential in applications, such as energy-saving, emergency lighting, furniture, smart building, and smart highway. Keywords Ethyl cellulose · Phase change materials · Thermal regulation · Self-luminous · Energy storage

Introduction

Water resistance and luminescent thermal stability of SiO₂ coated phosphor and self-luminous cement-based materials: View from the perspective of hydration balance Article Feb 2022

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