

New type of photoluminescent self-illuminating module



Overview

DuraMAT is developing an open-source, multi-camera nighttime photoluminescence imaging system called PLatypus. Key Laboratory for Advanced Materials, Shanghai Key Laboratory of Functional Materials Chemistry, Frontiers Science Center for Materiobiology & Dynamic Chemistry, School of Chemistry & Molecular Engineering, East China University of Science and Technology, Shanghai 200237, China

Luminescent. Inorganic photoluminescent materials, or self-illuminating materials, are a new class of materials that have the ability to emit light without the need for an external power source. PLatypus is a non-contact, low-profile, low-cost, very high-resolution alternative to existing field imaging techniques. It can collect a ~100-megapixel image of a photovoltaic (PV) module.



Article Content

Aug 30, 2025

Aerial Photoluminescence Imaging of Photovoltaic Modules

The unit is capable of partially illuminating full-sized modules at night and capturing the photoluminescence response. In the maiden flight, a

Aug 15, 2025

Recent Developments in Photoluminescent, Photothermal and ...

This Special Issue collates eleven papers, including nine research articles and two review articles, on recent research progress in emerging photoluminescent (PL), photothermal, and

Aug 21, 2025

Understanding Photoluminescence: Concepts and

By synthesizing the fundamental mechanisms, types, and challenges faced in the use of photoluminescent materials, we gain valuable insights into how light and

Oct 25, 2025

Progress in photoluminescent materials for light-emitting and ...

By highlighting key milestones and comparing material classes, this review provides critical insights into the design of next-generation photoluminescent materials. It also outlines current

Apr 20, 2026

Photoluminescent Applications for Urban Pavements

Photoluminescent mixes can be considered the new materials of the future due to their numerous benefits for society. Not only do they improve night

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A short review on long persistent luminescence materials and their ...

There are two main types of LPL materials: organic and inorganic. A new type of metal-organic LPL materials has also gained popularity. Inorganic LPL materials typically consist of

Oct 17, 2025

A comprehensive review on active self-luminous pavements: Materials ...

Currently, the most common type of ASLP is cement-based self-luminous pavement, but research on cement-based self-luminous materials is still in its infancy. The research focuses solely

Aug 26, 2025

OLED Technology

US Micro Products offers OLED technology that allows for self-illuminating display, vs LCD backlighting display, that work well for mobile, gaming and camera applications.

Mar 25, 2026

Fundamentals of Photoluminescent Materials

This chapter explores the fundamental principles of photoluminescent materials, such as photon absorption, energy transitions, and emission processes, while illustrating distinctions between

Oct 25, 2025

Crystal structure and photoluminescent study of bright ...

Crystal structure and photoluminescent study of bright orange light emitting $\text{Ca}_{0.5}\text{Bi}_3\text{P}_2\text{O}_{10}:\text{Sm}^{3+}$ nanophosphors for advanced illuminating and latent fingerprinting applications

Jul 22, 2025

PLatypus: Simple Field Photoluminescence Imaging with Low

PLatypus is a non-contact, low-profile, low-cost, very high-resolution alternative to existing field imaging techniques. It can collect a ~ 100 -megapixel image of a photovoltaic (PV) module in a few seconds

Aug 13, 2025

Adaptive electronics for photovoltaic, photoluminescent and ...

Wearable sensors typically require innovative methods of energy harvesting for low-power electronics. Here, the authors present an adaptive power management system with a trimodal energy ...

Jun 10, 2026

Self-illuminating pixels for a new display generation

The integration of self-illuminating pixels that can emit light, for example, by electrical stimulation, makes this possible. Organic light-emitting diodes, OLEDs for short, use such organic

Apr 01, 2026

Passive Electroluminescence and Photoluminescence

In photovoltaic power plant inspections, techniques for module assessment play a crucial role as they enhance fault detection and module

Nov 25, 2025

A new smart laser photoluminescent light (LPL) technology for the ...

This paper focuses on an innovative smart lighting system based on a blue-diode laser technology combined with photoluminescent pavements, to obtain a self-lighting surface with a

Apr 21, 2026

Progress in photoluminescent materials for light-emitting and ...

Photoluminescent materials have witnessed substantial advancements in synthesis techniques, structural design, and functional performance, driving inn

Dec 17, 2025

Photoluminescent signs: What are they and why do you

In this article we are going to explore what photoluminescent signage is, what the benefits for those who implement them are, and why they are so important in

Dec 27, 2025

Inorganic Photoluminescent Materials: The Future of Self-Illuminating ...

Inorganic photoluminescent materials, or self-illuminating materials, are a new class of materials that have the ability to emit light without the need for an external power source.

Jul 26, 2025

Self-Luminous and Photoluminescent Exit Signs

There are two types of non-electrical exit signs, photoluminescent (charges by absorbing light) and self-luminous which emit light from tritium gas filled tubes. There are strengths to using either but if you

Jul 05, 2025

Tritium Exit Signs – How They Work – Emergency Lights Co.

Tritium vs LED vs Photoluminescent Quick comparison of power source, lifespan, maintenance, and regulatory notes across exit sign types. ... For cost modeling and payback math, see our Exit sign

Jan 28, 2026

Recent progress in the patterning of perovskite films for

This review provides a comprehensive overview of patterning techniques for perovskite thin films, highlights photodetectors based on

Jan 16, 2026

A short review on long persistent luminescence materials and their ...

Considering global climate change concerns, issues related to the energy crisis and technologies reliant on non-fossil renewable energy sources are in high demand. Solar energy

Oct 21, 2025

Aerial Photoluminescence Imaging of Photovoltaic Modules

On-site imaging of modules in photovoltaic (PV) systems requires contact-free techniques with high throughput and low cost for commercial

Sep 30, 2025

Luminescent Materials with Advanced Properties and

Carbon dots, as a new type of luminescent carbon nanomaterial, exhibit fascinating optical properties. Yin's group utilized amine-rich soybean

Jan 20, 2026

(PDF) Self-healing photoluminescent polymers with

Herein, a novel family of self-healing and photo-stimuli-responsive photoluminescent polymers are reported, which is achieved by interlinking

Aug 28, 2025

A short review on long persistent luminescence materials and their ...

Excess energy stored within LPL materials can be released as luminescent light at night, making self-illuminating PV cells a potential solution for energy conservation and localized

May 03, 2026

Opportunities for Next-Generation Luminescent

We discuss recent progress using data-driven approaches to discover new compounds, predict optical properties, and optimize synthesis, among other

May 30, 2026

Photoluminescent Exit Signs -Ecoglo UL Certified

Ecoglo ® 's array of emergency photoluminescent exit signs ensures your building's emergency egress path is illuminated – even when a building's power system has

Dec 18, 2025

Self-healing photoluminescent polymers with photosensitive behavior

Herein, a novel family of self-healing and photo-stimuli-responsive photoluminescent polymers are reported, which is achieved by interlinking terpyridine- and spiropyran-functionalized

Mar 28, 2026

Photoluminescent self-healing polyurethane as

In this work, we developed a polyurethane with self-healing properties by introducing the dynamic Schiff bond into the backbone of polyurethane. In

Apr 21, 2026

Self-healing photoluminescent polymers with photosensitive behavior

In summary, a series of visible/UV-light-driven photosensitive photoluminescent polymers with superior mechanical properties and self-healing performance were successfully prepared.

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