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综述

稀土发光材料在荧光成像中的应用

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摘要：

稀土发光材料由于具有荧光寿命长、发射峰半峰宽窄和Stokes位移大等发光性质，在生命科学研究的各个领域，包括荧光免疫分析、离子识别、蛋白质活性测定、核酸检测等，有着广泛而重要的应用前景。本文以稀土配合物、稀土掺杂上转换材料和长余辉材料为代表，就当前稀土发光材料的发光性质及其在生物成像标记方面的研究做一综述，并对稀土发光材料，特别是长余辉材料，在荧光成像应用过程中存在的主要问题进行了讨论。

关键词： 稀土发光材料 荧光成像 稀土配合物 上转换材料 长余辉材料

Lanthanide Luminescence for Bioimaging

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Abstract:

Rare earth luminescent materials have long-life fluorescent emission, small full-width half-maximum (FWHM), and large Stokes shift, thereby have been receiving great attention in diverse applications, including fluorescence immunoassay, anion recognition, protein activity determination, nucleic acid detection. In this paper, the applications of rare earth complexes, lanthanide-doped upconversion nanoparticles, and persistent luminescence nanoparticles in bioimaging are reviewed, the main problems of the rare earth luminescent materials, particularly long persistent phosphors in fluorescent imaging are also discussed.

Keywords: Lanthanide luminescence Fluorescent imaging Lanthanide complex Upconversion luminescence Persistent luminescence nanoaprticles

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