

光谱学与光谱分析

Synthesis and Luminescent Properties of LuAG:Ce³⁺ Transparent Ceramics by Solvo-Thermal Method

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摘要 The precursor powders of LuAG:Ce³⁺ transparent ceramics were synthesized by solvo-thermal method. The crystal structure and morphology of powders were analyzed by means of Fourier transform infrared spectroscopy, X-ray diffraction and scanning electron microscopy. The precursor powders were sintered into transparent ceramics in vacuum and then in nitrogen without any additive. The surface morphology of the transparent unpolished ceramics was characterized using scanning electron microscopy. Some factors that affect the transparency of ceramics were discussed. The UV-Vis fluorescence excitation and emission spectra of LuAG:Ce³⁺ transparent ceramics were measured. The vacuum ultraviolet spectra of transparent ceramics were investigated using the synchrotron radiation as the excitation source. The excitation mechanism of Ce³⁺ was discussed at different excitation wavelength.

关键词 [Solvo-thermal](#) [LuAG:Ce³⁺](#) [Transparent ceramics](#) [Photoluminescence](#)

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