

Ga₂O₃-La₂O₃-Yb₂O₃-Er₂O₃(HO₂O₃)体系光谱性质的研究

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摘要 根据稀土离子能级的特点,对Ga₂O₃-La₂O₃-Yb₂O₃-Er₂O₃(HO₂O₃)体系的光谱性质进行了探讨,发现它们有二类发光性质:Stokes发光和反Stokes发光,研究了发光强度和发射波长与掺杂离子的依赖关系,观察到由能量的共振转移引起的荧光猝灭现象,并取得了最大发光强度时的掺杂离子浓度和一些规律性结果.

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Study on the spectroscopic properties of Ga₂O₃-La₂O₃-Yb₂O₃-Er₂O₃(Ho₂O₃) systems

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Abstract The LaGaO₃:Yb,Er(Ho) or solid solution LaGaO₃:Yb,Er-(Yb,Er,La)₃Ga₅O₁₂ were formed by solid state reaction in Ga₂O₃-La₂O₃-Yb₂O₃-Er₂O₃ (Ho₂O₃) systems, and the reflection, excitation, and emission spectra were measured. They have 2 kinds of luminescence properties; Stokes luminescence and anti-Stokes luminescence. The dependence of emission intensity on the concentration of the doped ions were studied. The concentration quenching phenomenon which was caused by energy resonance transfer was observed. The doped ions concentration of max. emission intensity as obtained. The dependence of emission wavelength on the concentration of the doped ions was observed. Some regularities were obtained.

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