

Structural and Luminescent Properties of EU Doped SrY₂O₄ Phosphors

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Abstract : Herein, we report the structural and luminescent properties of undoped and Eu doped SrY₂O₄ phosphors. The phosphors are synthesized via the combustion synthesis route using glycine as a fuel. The structural, morphological, and optical characterizations are done via X-ray diffraction (XRD), scanning electron microscopy (SEM), photoluminescent (PL) techniques. The pure phase SrY₂O₄ is obtained at 1100°C, below which impure phases such as Y₂O₃ and SrO were dominant. All the phosphors are excited under UV excitation and exhibited intense emission around 611 nm, which is the typical transition of Eu ions. The phase formation of the synthesized phosphors is studied via analyzing XRD patterns. The as-synthesized phosphors find tremendous applications in optoelectronic devices, light-emitting diodes, and sensors.

Keywords : combustion, europium, glycine, luminescence

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