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Effect of annealing temperature on structural and luminescence properties of Eu3+-doped Y2O3 red-emitting phosphor thin films by Pulse Laser Deposition method.

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Abstract content
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Abstract.
Pulse Laser Deposition was used to deposit red-emitting Y2O3:Eu3+ thin films. X-ray diffraction (XRD) measurement confirmed the crystallinity of the films which improved with an increase in annealing temperature. Photoluminescence measurement indicates intense red emission around 626 nm due to 5D0⟶7F2 transition of Eu3+. Scanning Electron Microscopy (SEM) show agglomerates of non-crystalline particles with spherical shapes for as-deposited films. After annealing at high temperature, SEM also confirms that the crystallinity of the films improved. Atomic Force Microscopy (AFM) further confirmed the crystallinity of the films at higher annealing temperatures. UV measurement gave a band gap in the range of 4.6-4.8ev. In this paper, the structural and photoluminescence (PL) properties of temperature dependence characteristics of Y2O2S:Eu3+ thin film, successfully deposited by PLD method were reported.

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PhD

Main supervisor (name and email)
and his / her institution

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