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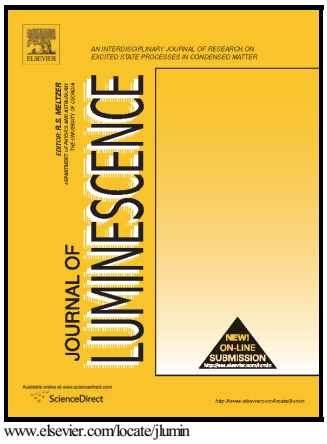

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YTTRIUM ALUMINUM GARNET COATING ON GLASS SUBSTRATE

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Abstract

Thin luminescent films have seen great technological advances and are applicable in the production of a variety of materials such as sensors, solar cells, photovoltaic devices, optical magnetic readers, waveguides, lasers, and recorders. Systems that contain yttrium aluminum oxide are important hosts for lanthanide ions and serve as light emission devices. This work deals with the deposition of yttrium aluminum garnet **(**YAG) film doped with Eu^{3+} onto a glass substrate obtained by the sol-gel methodology. Spray pyrolysis furnished the yttrium aluminum oxide powder. Dip-coating at a withdrawal speed of 10 $mm.min^{-1}$ and evaporation led to deposition of different numbers of layers of the YAG:Eu^{3+} film onto the glass substrate from a YAG:Eu^{3+} powder suspension containing ethanol, water, and tetraethylorthosilicate. Photoluminescence, X-Ray diffraction, scanning electron microscopy, and transparency measurements aided film characterization. The emission spectra revealed that the number of layers influenced film properties.