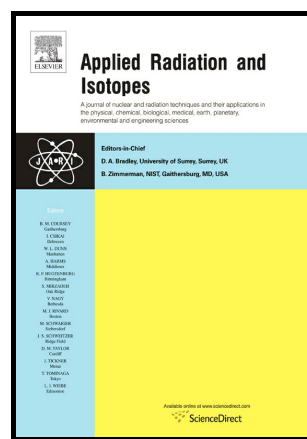


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Optically stimulated luminescence study in rare earth doped SrBPO₅

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Abstract

Optically stimulated luminescence (OSL) was studied in rare earth doped SrBPO₅ for the possible applications in radiation dosimetry using optically stimulated luminescence. The study shows that the sensitivity of the Eu doped SrBPO₅ shows good OSL and the sensitivity is comparable to that of Al₂O₃:C. It is observed that annealing has a profound effect on the OSL sensitivity. Slowly cooled Eu doped sample shows highest sensitivity and is 77% compared to that Al₂O₃:C whereas lowest sensitivity is observed in the quenched sample. Other properties like good linearity and low fading will make this phosphor suitable for the applications in radiation dosimetry using OSL.

Keywords: Inorganic materials; Thermoluminescence; Optically stimulated luminescence
Optical properties; Radiation effects; Sulphate based phosphors

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