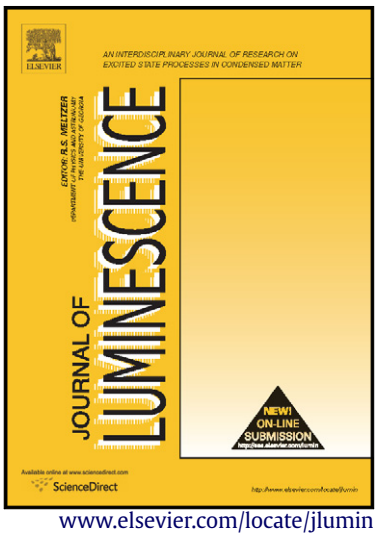

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PII: S0022-2313(14)00588-2
DOI: http://dx.doi.org/10.1016/j.jlumin.2014.10.017
Reference: LUMIN12947

To appear in: *Journal of Luminescence*

Received date: 27 June 2014
Revised date: 13 September 2014
Accepted date: 8 October 2014

Cite this article as: Raewat Laopaiboon, Cherdsak Bootjomchai, Thermoluminescence studies on alkali-silicate glass doped with dysprosium oxide for use in radiation dosimetry measurement, *Journal of Luminescence,* http://dx.doi.org/10.1016/j.jlumin.2014.10.017

Thermoluminescence studies on alkali-silicate glass doped with dysprosium oxide for use in radiation dosimetry measurement

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Abstract

Alkali-silicate glass doped with dysprosium oxide was prepared and investigated. Recycled window glass (RWG) was substituted with pure SiO_2 chemical as starting material. Physical properties of the glass samples such as density, molar volume and ion concentrations were determined. The thermoluminescence properties such as sensitivity and linearity of the glass samples were investigated. Trap depth parameters were studied using the glow curve shape method. Moreover, the optical absorption of the glass samples was studied with the transition mechanisms of Dy^{3+} ions.

Keyword: Glasses; thermoluminescence; dose response; optical absorption; trap parameters.