A new thermoluminescence mixed order model for continuous and uniform distribution of trapping centers

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Abstract
A mixed order model is proposed for describing thermoluminescence (TL) glow peaks with continuous and uniform distribution of trapping states. It is shown that the presented function reduces to the simple known models at the limiting cases. The function for TL intensity has been introduced in terms of intensity and temperature of the peak maximum. These parameters can easily be estimated from the shape of the glow peak as initial guesstimate for the curve fitting procedure. Considering the direct relation between the parameters entered in the proposed model and the physics of TL phenomenon, it is deduced that it is more appropriate for describing TL peaks with continuous distribution of trapping states.

Keywords: thermoluminescence, mixed order, continuous trap