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**Correlation between Non-Linear Optical Parameter and Structure of Li2B4O7 Glasses Doped with Er3*+*ions**

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**Abstract**

The glass system 90 Li2B4O7 *+ x* Er2O3 *+* (10 *x*) BiCl3, where 0.1 ≤ *x* ≤ 0.5 mol%, has been synthesized by melt quenching technique. The Judd-Ofelt (JO) theory has been initiated for the precise analysis of the peak intensities. The JO parameter Ω2, which represents asymmetry and covalency of the emission environment increases with increase in Er3+ ions, while Ω4 and Ω6 reveal the rigidity of the host medium. Radiative parameters such as *τ*R, AR, *β*R, FOM, and *σ*R have been calculated. The photometric studies, CIE & CCT studies confirm that, for all the investigated glasses CIE coordinated diagram is found to be white light. CCT graph which gives white light emission around 10000K. Two photon absorption coefficient (TPA) of Er3*+* doped glasses lie in the range of 7.491 to 8.868. Glasses with highest TPA shows low Eg values indicating a large density of states of O2- in highest occupied molecular orbitals.

**Keywords:**

Judd-Ofelt parameter, Raman study, IR study, Photoluminescence, Borate glasses

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