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## Thermo-luminescence Study of Lithium Borate Glasses Doped with Dy<sup>3+</sup> and Yb<sup>3+</sup> and Containing Silver Nano-Particles as Possible use in Ionized Radiation

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In this work, it was synthesized and characterized Lithium Borate Glasses doped with rare earths in different concentrations and containing Silver nanoparticles. The rare earths employed were Dy<sup>3+</sup> and Yb<sup>3+</sup>. The Scanning Electron Microscope (SEM) show the formation of Silver nanoparticles, absorption spectra of the samples show the presence of bands in 420nm and 450nm associated with the SNP (Plasmon effect), and 750nm, 800nm, 875nm, 1098nm and 1278nm belonging to the Dy<sup>3+</sup> and one large peak in 976nm belonging to the Yb<sup>3+</sup>. Emission spectra show two prominent bands in 480nm, 574nm, and one faint band in 665nm, all bands under 364nm pumping, and the fluorescence in the 550nm and 590nm spectral range enhanced two times. The TL response to UV irradiation was studied, the glow curve shows significant dependence of the TL intensity with the increment of the SNP in the samples.

**Keywords:** Thermoluminescence, Glasses, Silver nanoparticles