

## S7-1.5

# Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub> for Thermoluminescent Dosimetry: A New Life of an Old Material

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The effect of doping conditions on the properties of Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>-based thermoluminescent materials is studied. It is shown that suppression of Mn clustering improves the linearity of the radiation dose response. Moreover, the order of doping is essential to achieve the formation of trapping and luminescence centers: simultaneous co-doping with Mg degrades the sensitivity of detectors by a factor of 10, while sequential Mg co-doping doesn't diminish the sensitivity but decreases the dispersion of properties in the batch. The origin of the observed technological effects is discussed.