

Luminescence and optical properties of relaxor ferroelectrics

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Abstract

The optical absorption spectrum, luminescence and photoconductivity on single crystals $\text{PbMg}_{1/3}\text{Nb}_{2/3}\text{O}_3$ and on ceramics $\text{Pb}_{0.91}\text{La}_{0.09}(\text{Zr}_{0.65}\text{Ti}_{0.35})\text{O}_3$ are investigated in the wide temperature range. The luminescence spectrum correlates with the photoconductivity spectrum. The position of the maximum of the luminescent emission spectrum indicates the origin of the charge carriers emitted from the defect centers. On the basis of the data the properties of the local centers are determined, and the phenomenological approach to the relaxor theory is discussed.

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Keywords

Optical properties, PMN, PLZT, Relaxor ferroelectrics