

Photoluminescence study of α - ZnAl₂S₄ single crystals

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Abstract

Photoluminescence (PL) spectra of ZnAl₂S₄ crystals with spinel structure were studied under the extrinsic excitation. The PL bands at 0.98 eV and 1.34 eV are suggested to be caused by native defects; while the bands at 1.61 eV and 2.0 eV are associated with the Cr and Mn impurities respectively. Mn²⁺ intracentral transitions were investigated by the PL excitation spectroscopy.