

Thermal expansion anisotropy of CuIn₁₁Se₁₇ single crystals

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2022

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Keywords: Single crystals, Bridgman technique, Crystal structure, Thermal expansion, Anisotropy.

Abstract: Homogeneous single crystals of CuIn₁₁S₁₇ with 14 mm in diameter and 40 mm in length were grown by directional crystallization of the melt (vertical Bridgman method). The composition and structure of the obtained single crystals were determined by the X-ray microanalysis and the X-ray diffraction analysis, respectively. It is shown that the obtained single crystals crystallize in a hexagonal structure. The anisotropy of thermal expansion was investigated for single crystals oriented parallel and perpendicular to the main crystal axis in the temperature range of 120–600 K. It was found that anomalies of thermal expansion are observed in the indicated single crystals oriented parallel to the main crystal axis.

Bodnar, I. V. Thermal expansion anisotropy of CuIn₁₁Se₁₇ single crystals / I. V. Bodnar, V. V. Khoroshko // Journal of Crystal Growth. – 2022. – Vol. 584. – P. 126563. – DOI : <https://doi.org/10.1016/j.jcrysgro.2022.126563>.