

Growth of NaBr in the 5-5 Structure Type on LiNbO₃: A Feasibility Study

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Z. Naturforsch. **61b**, 650 – 659 (2006); received October 26, 2005

Dedicated to Professor Wolfgang Jeitschko on the occasion of his 70th birthday

The feasibility of growing alkali halides in the hypothetical 5-5 structure type on a specially prepared substrate of LiNbO₃ has been investigated. The highest degree of steering towards this structure is achieved by growing NaBr on a LiNbO₃ (001)-surface, where the outermost layer of oxygen atoms is followed by a layer of niobium atoms. The kinetic stability, against transition into the rock salt structure, of the 5-5 structure grown on the substrate is enhanced compared to the bulk 5-5 phase, but the 5-5 structure will nevertheless still be metastable compared to the rock salt structure type that constitutes the thermodynamically stable bulk phase of NaBr under standard conditions.

Key words: Halides, Lithium Niobate, Surface Energies, Wulff Construction, Metastable Phases