

Substitution Effect in the Ion Conductor Li_3InBr_6 , Studied by Nuclear Magnetic Resonance

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Z. Naturforsch. **57 a**, 447–450 (2002); received January 23, 2002

Presented at the XVIth International Symposium on Nuclear Quadrupole Interactions, Hiroshima, Japan, September 9-14, 2001.

$\text{Li}_{3-2x}\text{Mg}_x\text{InBr}_6$ ($x = 0.02 - 0.4$) was synthesized, and the cation substitution effect on the conductivity was investigated by means of ^7Li and ^{115}In NMR, and X-ray diffraction. With increasing x the lattice constants a and c increased, but b and β did not show significant changes. The conductivity of the low temperature phase increased with x , associated with a narrowing of the ^7Li NMR spectra. In the high temperature superionic phase, on the other hand, the conductivity decreased with x accompanied by a broadening of the ^{115}In NMR spectra.

Key words: NMR; Ionic Conductivity; Lithium Ion Conductor; Quadrupole Effect.