

CONCENTRATION DEPENDENCE OF  $^{127}\text{I}$   
NQR SPECTRUM PARAMETERS FOR MIXED  
LAYERED SEMICONDUCTORS  $(\text{BiI}_3)_{1-x}(\text{PbI}_2)_x$

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S u m m a r y

The results of our studies dealing with the NQR spectra of  $^{127}\text{I}$  in mixed layered semiconducting crystals  $(\text{BiI}_3)_{1-x}(\text{PbI}_2)_x$  measured at a temperature of 77 K and in a wide range of  $\text{PbI}_2$  contents  $x$  ( $0 < x < 0.5$ ) are reported. In the range  $0.05 < x < 0.2$ , the observed behavior of  $^{127}\text{I}$  NQR spectrum parameters testifies that  $\text{PbI}_2$  atomic groups are located within the structural layers of a  $\text{BiI}_3$  crystal. In this  $x$ -range, clusters composed of  $\text{PbI}_2$  groups were demonstrated to form an island structure. A further growth of the  $\text{PbI}_2$  content results in the appearance of a new  $^{127}\text{I}$  NQR line which testifies that the mixed crystal  $(\text{BiI}_3)_{1-x}(\text{PbI}_2)_x$  undergoes a structural phase transition at  $x \approx 0.2$ . A conclusion is made that, at  $x \geq 0.2$ , the synthesized crystal is a glassy substitutional solid solution, in which  $\text{PbI}_2$  atomic groups, being completely or partially ordered, are intercalated between the  $\text{BiI}_3$  crystal layers.