

MECHANISM OF DEFECT FORMATION  
IN HEAVILY Y-DOPED  $n$ -ZrNiSn.  
II. ELECTRO-TRANSPORT STUDIES

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S u m m a r y

The temperature and concentration dependences of the resistivity  $\rho$  and the thermopower coefficient  $\alpha$  of a  $Zr_{1-x}Y_xNiSn$  intermetallic semiconductor heavily doped with an acceptor Y impurity have been studied in the ranges  $T = 80 \div 380$  K and  $N_A^Y = 3.8 \times 10^{10} \text{ cm}^{-3}$  ( $x = 0.02$ )  $\div 4.8 \times 10^{21} \text{ cm}^{-3}$  ( $x = 0.25$ ). A conclusion on the mechanisms of conductivity in this compound is made. The dependences between the impurity concentration and the parameters of the modulation amplitude of the continuous energy bands have been established. The results obtained are discussed in the framework of the Shklovskii–Efros model for a heavily doped and strongly compensated semiconductor.