CONDUCTION PECULIARITIES IN $ZrNiSn_{1-x}In_x$ SEMICONDUCTOR SOLID SOLUTION

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S u m m a r y

The temperature and concentration dependences of resistivity and thermoelectric power for the $ZrNiSn_{1-x}In_x$ semiconductor solid solution are studied in the wide temperature ($T = 80 \div 380$ K) and concentration ($x = 0 \div 0.15$) ranges. It is shown for the first time that, in the heavily doped and completely compensated semiconductor, the maximal amplitude of fluctuations of the continuous energy bands is equal to the half-width of the band gap and the Fermi level is located in the middle of the band gap. The correlation between the fluctuation parameters of the continuous energy bands, the fluctuation amplitude, and the potential well depth of small-scale fluctuations was established experimentally.