

Study of electrical conductivity of La_2S_3

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Samples of La_2S_3 were synthesized by sulfurization method. A study of the temperature dependence of conductivity of La_2S_3 was made in a range of 100–1000 K. At $T < 140$ K, the electrical conduction has a hopping character. When the temperature rises, the electric transport gradually passes to the band mechanism of conduction. The activation energies of La_2S_3 conductivity at various temperatures are determined and a model of the band structure of La_2S_3 is proposed.

Keywords: electrical conductivity, band structure, sulfurization, hopping conductivity, lanthanum sesquisulphide, activation energy.

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