**Influence of polymorphism on the electronic structure of silicon dichalcogenides**

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**Abstract:** In the local approximation of the density functional theory, calculations were made of the band structure, the total and partial densities of states, and the distribution of the electron density of the rhombic and monoclinic phases of SiSe2. The nature of the three valence bands and the conduction band is established. The positions and nature of the bands in the electronic spectrum of SiSe2 practically do not change when passing from a rhombic structure to a monoclinic one. There is an insignificant increase in the total width of the valence band and the width of the forbidden band. It is established that the chemical bond in the LT- and HT-phases of SiSe2 has a mixed covalent-ion-van der Waals nature and is essentially anisotropic. The ion component is due to the polarization of the charge density in the Si–Se direction, which is covalent to the overlapping of Si–Se valence states.

**Keywords:** silicon diselenide; crystal structure; band structure; density of states; optical functions.