

Comparative Study between 2H-NbSe₂ and 2H-TaSe₂: Superconductivity and Charge Density Wave

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Abstract: Here we have compared two transition-metal dichalcogenide single crystal compounds of 2H-NbSe₂ and 2H-TaSe₂. Both the compounds show superconductivity (SC) and charge density wave (CDW) states. The change in transition temperature is related to the density of states due to the different size of transition-metal atom which does not affect significantly to their structural symmetry. This is explained qualitatively and quantitatively by the equation used for coexistence of SC and CDW state.

Keywords: Transition-metal compounds; superconductivity; charge-density-wave

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