

Electric Transport Properties of Sn-Doped $\text{Bi}_2\text{Te}_2\text{Se}$ Topological Insulators

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Topological insulators are new states of quantum matter. In these materials surface states reside in the bulk insulating gap and they are protected by time-reversal symmetry. $\text{Bi}_2\text{Te}_2\text{Se}$ are topological insulators with resistivities twice order of magnitude higher than in Bi_2Te_3 or Bi_2Se_3 .

In this work we described influence of Sn-doping on transport properties. $\text{Bi}_2\text{Te}_2\text{Se}$ and $\text{Bi}_{1.99}\text{Sn}_{0.01}\text{Te}_2\text{Se}$ were grown using modified Bridgman method. The temperature dependent of bulk resistivities, carrier densities and Hall resistivity for both crystals will be compared and discussed.



Figure 1. As-grown $\text{Bi}_2\text{Te}_2\text{Se}$ and $\text{Bi}_{1.99}\text{Sn}_{0.01}\text{Te}_2\text{Se}$ single crystals