

## Transport Properties in $\text{Bi}_2\text{Te}_3$ under High Pressure up to 8 GPa

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Bismuth telluride ( $\text{Bi}_2\text{Te}_3$ ) has a rhombohedral structure with the space group  $R\bar{3}m$  at ambient condition. X-ray diffraction study reveals no structural phase transition up to 8 GPa, but the lattice parameter ratio  $c/a$  shows a minimum at around 2 GPa.<sup>1</sup> Moreover, the temperature dependence of the electrical resistivity changes from metallic to semiconducting with increasing pressure from 1.0 GPa to 6.2 GPa. These results suggest that the electronic structure near the Fermi level changes at around 2 GPa, where  $c/a$  shows a minimum. In this study, we investigate the temperature dependence of the electrical resistivity and the Hall effect up to 8 GPa and discuss the effect of pressure on conduction mechanism. The measurements perform using modified Bridgman-anvil cell and piston-cylinder apparatus.

<sup>1</sup>A. Nakayama *et al.*, High Pressure Research **81**, 245 (2009).