

Future Scope of work

Materials such as InBi and its alloys are unique and can be used for cooling and energy generation applications. Because of their high Seebeck coefficients, low electrical resistivity and relatively low thermal conductivity, tellurium alloys (p-type Bi_2Te_3 and n-type Sb_2Te_3) are widely used in the thermoelectric devices. As semiconductor technology advances, radiation is becoming increasingly important in improving crystal properties. In ion beam treatment, microstructural changes in crystals may take place and take place irreversibly, which in turn may change their chemical, optical, mechanical and electrical properties. It can be used to modify the near-surface properties of a bulk crystal or to change the physical properties of thin films in a controlled manner. The impact of ion beam irradiation on microstructure and the ensuing property modification can be investigated for application appropriateness. As a result, ion beam irradiation can be utilised to change the characteristics of these crystals.

Further, photoconductivity and electrical properties of thin film, mechanical creep and effect of high temperature quenching on micro hardness of the crystals can also be studied to supplement study of other properties and their modifications.