Abstract:

The conduction behaviour of different compositions of the Bi\(_{1-x}\)Tex system with 30 \(\leq x \leq 60\) at.% is ohmic. Transition from metallic to semiconducting behaviour could be observed as the ambient temperature exceeds a certain value dependent on both \(x\) and the conditions of annealing. The activation energy of conduction (\(\Delta E\)) calculated in the semiconducting region varied with \(x\) in an unsequential manner emphasizing the role of the existing different phases. However, the change in electrical conductivity could be attributed to a corresponding change in \(\Delta E\).

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