

Thermal Transformation and Structural on Se₉₀Te₇Cu₃ Chalcogenide Glass

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Abstract : In this study, Se₉₀Te₇Cu₃ chalcogenide glass was prepared using the melt quenching technique. The amorphous nature of the as prepared samples was confirmed by scanning electron microscope (SEM). Result of differential scanning calorimetric (DSC) under nonisothermal condition on composition bulk materials are reported and discussed. It shows that these glasses exhibit a single-stage glass transition and a single-stage crystallization on heating rates. The glass transition temperature (T_g), the onset crystallization (T_c), the crystallization temperature (T_p), were found by dependent on the composition and heating rates. Activation energy for glass transition (E_t), activation energy of the amorphous -crystalline transformation (E_c), crystallization reaction rate constant (K_p), (n) and (m) are constants related to crystallization mechanism of the bulk samples have been determined by different formulations.

Keywords : chalcogenides, heat treatment, DSC, SEM, glass transition, thermal analysis

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