On the Structure of As$_2$Te$_3$ glass

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Abstract:

X-ray scattering has been used to investigate the structure of glassy As$_2$Te$_3$, prepared by quenching in liquid nitrogen. The result of the coherent scattered x-ray intensity proved that the medium-range order (MRO) is very weak, and this was attributed to the higher metallic nature of the glass. Analysis of the first two peaks in the curve of the total radial distribution function, T(r), revealed that the short-range order (SRO) in the glassy state is different from that in the crystalline state, and that the first coordination sphere includes As–As and Te–Te bonds in addition to the As–Te bonds.

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