FIGURE CAPTION'S

FIGURE

2.1 Volume - Temperature relationship for glass forming system.

2.2 The effect of rate of cooling on glass transition temperature (Tg), Curve 1, rapid cooling; Curve 2, medium rate; curve 3, Slow rate.

2.3 Bond counting statistics for the three - two Co-ordinated alloy A1-xBx. The solid lines are derived from the random covalent network model and dashed lines from the chemically ordered network model.

2.4 Bond counting statistics for the four - two Co-ordinated alloys A1-xBx. The solid lines are derived from the random covalent network model and dashed lines from the chemically ordered network model.

2.5 a) Sketch of the electronic density of states of a perfect crystalline tetrahedrally and conduction band edges, respectively and Ef is the Fermi energy. Eopt is the approximate value of the optical band gap, while EA represents the activation energy for free electron conduction.

2.5 b) Sketch of the electronic density of states of an ideal amorphous tetrahedrally bonded solid Ev
and $E_c$ are the valance and conduction bond mobility edges, respectively; the other notations are same as in a)

2.6 a) Sketch of the electronic density of states of a perfect crystalline chalcogen solids

2.6 b) Sketch of the electronic density of states of an ideal amorphous chalcogen solids.

2.7 Sketch of the electronic density as-deposited evaporated amorphous silicon.

2.8 Sketch of the effective one-electron density of states of a typical chalcogenide glass.

2.9 a) Configurational coordinate diagram for the singly occupied dangling bond

b) Combined level diagram for singly and doubly occupied dangling bond.

2.10 Schematic drawing of DSC or DTA trace under constant scan rate conditions for the crystallization process which obeys the JMA transformation rate equations.

3.1 a) Schematic representation of the DSC system (S = Sample, R = Reference)

b) Schematic representation of the DSC loops.

3.2 Sketch of the DSC thermogram showing endo and exothermic peaks

3.3 Specific heat curve of (Sapphire) a standard materials.

3.4 DSC block diagram.
4.1 Extent of glass forming regions in some tertiary chalcogenide systems A-B-C

4.2 DSC thermogram of a - Se\textsubscript{70}Te\textsubscript{30} at a heating rate of 5 °K/mm.

4.3 DSC thermogram of a - Se\textsubscript{69.5}Te\textsubscript{30}Ga\textsubscript{0.5} at a heating rate of 5 °K/mm.

4.4 DSC thermogram of a - Se\textsubscript{65}Te\textsubscript{30}Ga\textsubscript{5} at a heating rate of 5 °K/mm.

4.5 DSC thermogram of a - Se\textsubscript{60}Te\textsubscript{30}Ga\textsubscript{10} at a heating rate of 5 °K/mm.

4.6 LnLn(1-\alpha)-1 Vs 1000/T curve for a - Se\textsubscript{70}Te30

4.7 LnLn(1-\alpha)-1 Vs 1000/T curve for a - Se\textsubscript{69.5}Te\textsubscript{30}Ga\textsubscript{0.5}

4.8 LnLn(1-\alpha)-1 Vs 1000/T curve for a - Se\textsubscript{65}Te\textsubscript{30}Ga\textsubscript{5}

4.9 LnLn(1-\alpha)-1 Vs 1000/T curve for a - Se\textsubscript{65}Te\textsubscript{30}Ga\textsubscript{10}

4.10 Ln\alpha Vs 1000/T curve for a - Se\textsubscript{70}Te\textsubscript{30}

4.11 Ln\alpha Vs 1000/T curve for a - Se\textsubscript{69.5}Te\textsubscript{30}Ga\textsubscript{0.5}

4.12 Ln\alpha Vs 1000/T curve for a - Se\textsubscript{65}Te\textsubscript{30}Ga\textsubscript{5}

4.13 Ln\alpha Vs 1000/T curve for a Se\textsubscript{65}Te\textsubscript{30}Ga\textsubscript{10}

4.14 Activation Energy of Crystallization as a function of Ga Concentration in a-Se\textsubscript{70}-XTe\textsubscript{30}Ga\textsubscript{X} (X = 0, 0.5, 5, 10)