

The ternary Ag-Ge-Sn system have been experimentally examined and thermodynamically modelled by using CALPHAD method. Experimental examination has been performed by using differential thermal analysis (DTA), differential scanning calorimetry (DSC), scanning electron microscopy (SEM) with energy dispersive spectrometry (EDS), and X-ray powder diffraction (XRD) analysis. Alloys were from two isothermal sections at (200 and 300) °C and three vertical sections Ag-GeSn, Ge-AgSn, and Sn-AgGe. Based on the experimental results, a thermodynamic description of the ternary Ag-Ge-Sn system has been developed by using CALPHAD method. Reasonable agreement between experimental data and the calculated phase diagrams has been reached. The liquid projection and invariant equilibria have been calculated by using obtained thermodynamic parameters.