

In this work the ternary Cu-Ge-In system has been experimentally examined and analytically studied by using the CALPHAD method. The Cu-Ge-In system is interesting due to the possible application in the electro industry and since phase equilibria of the ternary Cu-Ge-In are unknown. Three vertical sections Cu-GeIn, Ge-CuIn and In-CuGe were experimentally investigated by using differential thermal analysis (DTA) and experimental results were compared with predicted corresponding vertical sections. Nine samples were annealed at 300 °C and 200 °C and analyzed using X-ray powder diffraction (XRD) and scanning electron microscopy (SEM) with energy dispersive spectrometry (EDS). EDS results were compared with calculated isothermal sections at 300 °C and 200 °C. According to the comparison of experimental results and calculated phase diagram, good agreement has been achieved. Liquidus projection, invariant reaction and scheme of invariant reaction are presented. Scheil and Lever simulation of solid phases for $\text{Cu}_{80}\text{Ge}_{10}\text{In}_{10}$ alloy were calculated.