

MSc. Pavlo Lyutyy

G.V. Karpenko Physico-Mechanical Institute

National Academy of Science, Lwów, Ukraina

Thermo-dynamical and structural properties in *3d*-Ga-Si ternary systems

The isothermal sections of the phase diagrams at 870 K over the whole concentration range were constructed for {Cr, Fe, Co, Cu} Ga Si system by X-ray phase and microstructure analyses. Crystal structure of the 7th compounds determine firstly by using X-Ray powder and single crystal methods (two of them are representatives of the new structure types). The crystal structures of the new and literature known compounds in the title systems have been crystallographically analysed. It was found that the ternary compounds are stabilized high temperature modification or close related to the binary compounds. Crystal structure relationship between new and literature known Transition metal–Ga–Si binary and ternary compounds were shown. All compounds can be represented as packing of the empty or filled cubes with the different stage of the deformation.