

## **Effect of Ag on the Short/Medium Range Order of Ti-Zr-Ni Quasicrystal**

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The influence of small additions of Cu, Ag, Au, Pt, Pb, and Si on the formation and stabilization of Ti-Zr-Ni icosahedral quasicrystal (i-phase) are discussed. Among these elements, only the addition of Ag improved the stability and formability of the i-phase. A small amount of supercooling and the nucleation and growth of only the i-phase from the liquid during levitation melting experiments signal the presence of well-developed extended icosahedral short rangeorder (ISRO) in the liquid. This is supported by two times smaller interfacial free energy of Ag added sample than Ti-Zr-Ni i-phase, and structure factor from ab-initio MD simulation. These results are explained in terms of a better atomic size ratio of Ag to Zr to form ISRO.