

Abstract Submitted  
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**The role of Ti in the formation of Zr-Ti-Cu-Ni-Al glasses<sup>1</sup>** T.H. KIM, A.K. GANGOPADHYAY, L.Q. XING, G.W. LEE, Y.T. SHEN, K. F. KELTON, Dept. of Physics, Washington U., St. Louis, MO, A.I. GOLDMAN, Ames Laboratory USDOE and Iowa State U., Ames, IA, R.W. HYERS, U. Mass, Amherst, MA, J.R. ROGERS, NASA MSFC, Huntsville, AL — It has been widely reported that glass formation improves in  $Zr_{62}Cu_{20}Ni_8Al_{10}$  alloys when small amounts of Ti are substituted for Zr. Glasses containing greater than 3 at.% Ti crystallize to a metastable icosahedral phase, suggesting that Ti enhances icosahedral short range order (ISRO) in the liquid/glass, making crystallization more difficult during cooling. Based on *in-situ* high-energy synchrotron diffraction studies of electrostatically levitated (ESL) supercooled liquids and rapidly quenched amorphous alloys, we demonstrate ISRO in all cases irrespective of the Ti concentration. Further, our ESL solidification studies show that Ti inhibits surface crystallization, but does not improve glass formation.

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