

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

High-energy diffraction measurements of deeply undercooled Co-Pd liquids using electrostatic levitation¹ G.E. RUSTAN, Iowa State University, N.A. MAURO, J.C. BENDERT, K.F. KELTON, Washington University, A. KREYSSIG, A.I. GOLDMAN, Iowa State University — Co-Pd liquids in their deeply undercooled state have attracted a great deal of interest because of the potential for magnetically triggered nucleation of the solid phase. We report on the results of high-energy x-ray diffraction measurements, using 129 keV x-rays at the Advanced Photon source, on a series of liquid Co-Pd alloys in a containerless environment employing electrostatic levitation. Diffraction data were collected using a flat-plate two-dimensional detector during free cooling from temperatures well above the liquidus, to as much as 200 degrees C of undercooling for compositions ranging from 50:50 to 80:20 (Co:Pd). The composition dependence and temperature dependence of differences in structure will be discussed.

¹This work was supported by the National Science Foundation under grant DMR-08-01757, DMR-06-06065, DMR-08-56199 and NASA under grants NNX07AK27G and NNX09AJ19H.

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Date submitted: 12 Nov 2010

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