Supplemental Information for: Irradiation stability and induced ferromagnetism in a nanocrystalline CoCrCuFeNi highly-concentrated alloy

Matheus A. Tunes[a,*], Graeme Greaves[b], Phillip D. Rack[c,d], Walker L. Boldman[d], Cláudio G. Schön[e], Stefan Pogatscher[f], Stuart A. Maloy[a], Yanwen Zhang[d,g], Osman El-Atwani[a]

[a]*Materials Science and Technology Division, Los Alamos National Laboratory, United States*
[b]*School of Computing and Engineering, University of Huddersfield, United Kingdom*
[c]*Joint Staff Center of Nanophase Materials Sciences, Oak Ridge National Laboratory, United States*
[d]*Materials Science and Engineering Department, University of Tennessee, United States*
[e]*Department of Metallurgical and Materials Engineering, Polytechnic School, University of São Paulo, Brazil*
[f]*Chair of Nonferrous Metallurgy, Montanuniversitaet Leoben, Austria*
[g]*Materials Science and Technology Division, Oak Ridge National Laboratory, United States*

Abstract

This supplementary information file contains the results from the SRIM-2013Pro calculations for fluence-to-dpa conversion

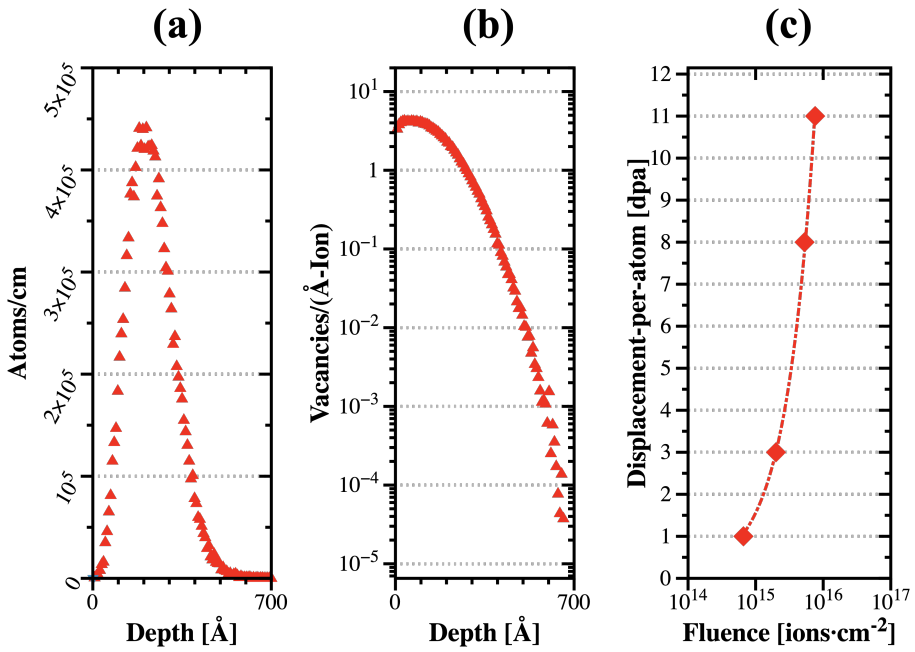

Figure 1 SRIM calculations and fluence-to-dpa conversion|d Plot in (a) shows the implantation profile for 300 keV Xe ions into the CoCrCuFeNi highly-concentrated alloy. The plots in (b) and (c) show, respectively, the number of vacancies per Å and ion collision and the fluence-to-dpa conversion for the irradiation experimental setup used in this work.

*Corresponding author:
Email address: tunes@lanl.gov (Matheus A. Tunes)

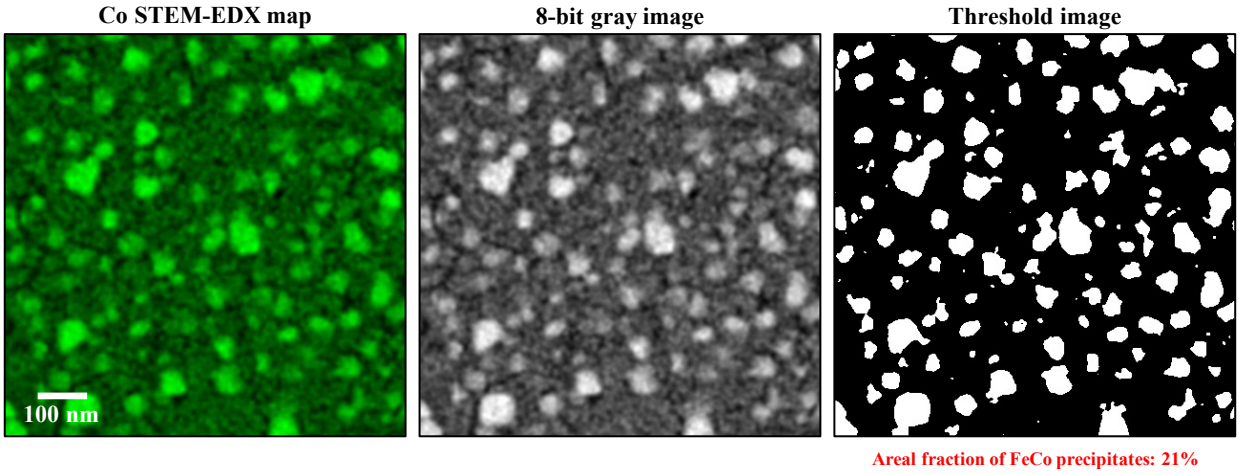

Figure 2 Areal fraction estimation of FeCo precipitates| By using the Co STEM-EDX map, we have used the threshold image method within ImageJ. The areal fraction of FeCo precipitates within the CoCrCuFeNi nanocrystalline HCA after thermal annealing is approximately 21%.