

Supporting Information

Asymmetric Thermoelectric Performance Tuning in Low-Cost $\text{ZrFe}_x\text{Ni}_{1-x}\text{Sb}$ Double Half-Heusler Materials

Joseph Ngugi Kahiu[†], Samuel Kimani Kihoi[‡], Hyunji Kim[‡], U. Sandhya Shenoy[§], D. Krishna Bhat^{||}, and Ho Seong Lee^{*,†,‡}

[†]Department of Hydrogen and Renewable Energy, Kyungpook National University, 80 Daehak-ro, Buk-gu, Daegu, 41566, Republic of Korea.

[‡]School of Materials Science and Engineering, Kyungpook National University, 80 Daehak-ro, Buk-gu, Daegu, 41566, Republic of Korea

[§]Department of Materials Science and Engineering, Institute of Engineering and Technology, Srinivas University, Mukka, 574146, Mangalore, Karnataka, India

^{||} Department of Chemistry, National Institute of Technology Karnataka, Surathkal Srinivasnagar, 575025, Mangalore, Karnataka, India

*Email: hs.lee@knu.ac.kr

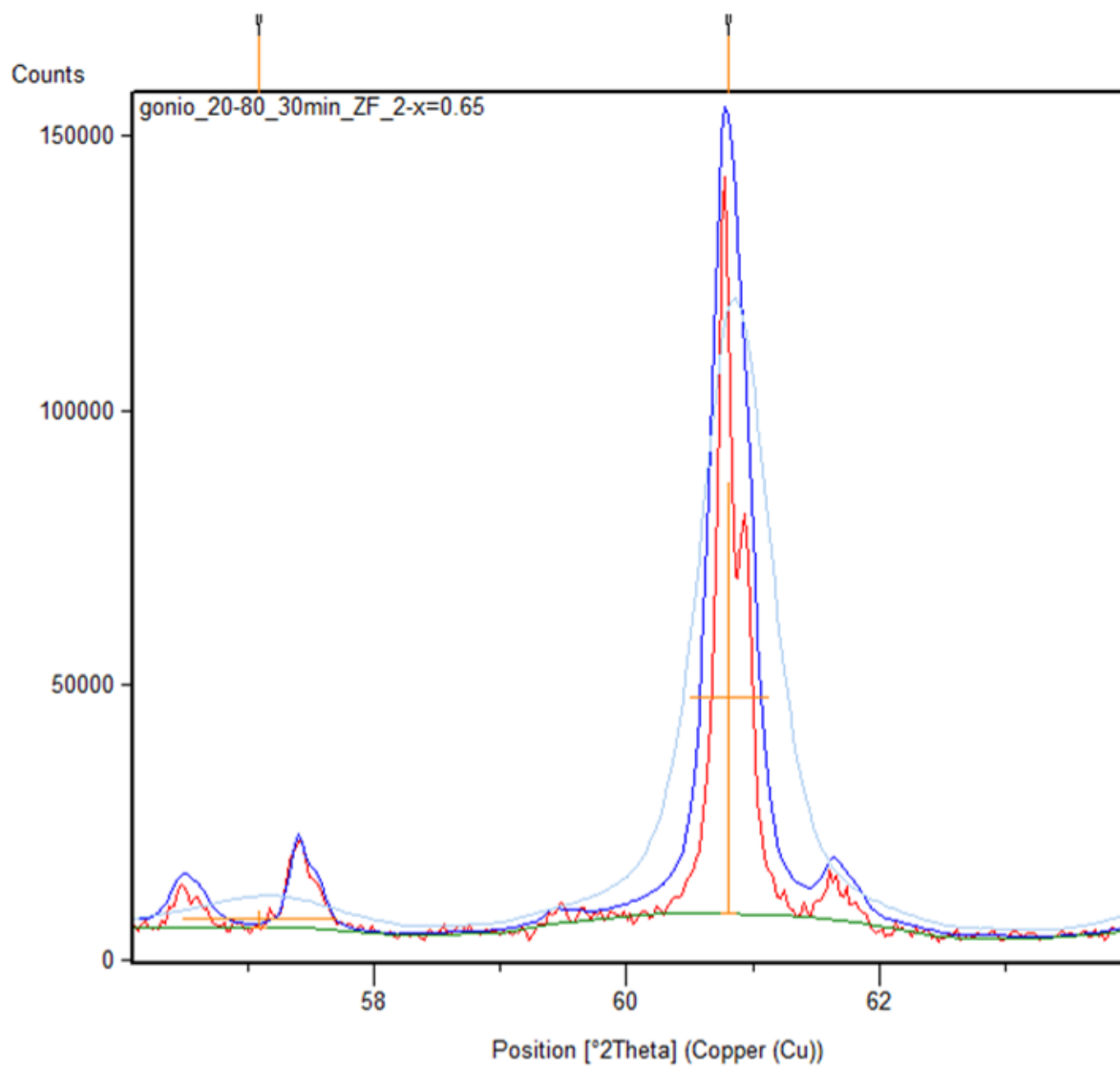


Figure S1 XRD profile fit made with the X'pert HighScore Rietveld refinement software for the $\text{ZrFe}_{0.65}\text{Ni}_{0.35}\text{Sb}$ sample.

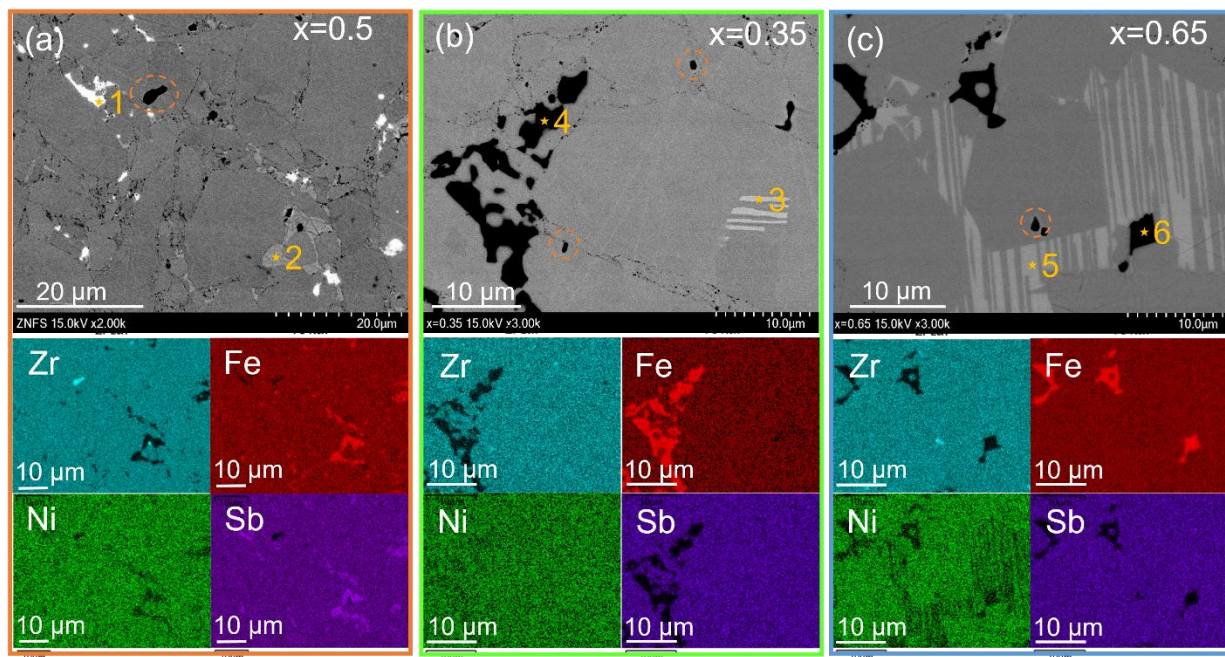


Figure S2 FESEM BSE images and corresponding elemental map spectra of samples (a) $x = 0.50$, (b) $x = 0.35$, and (c) $x = 0.65$. The dashed circles mark Zr-rich precipitates.

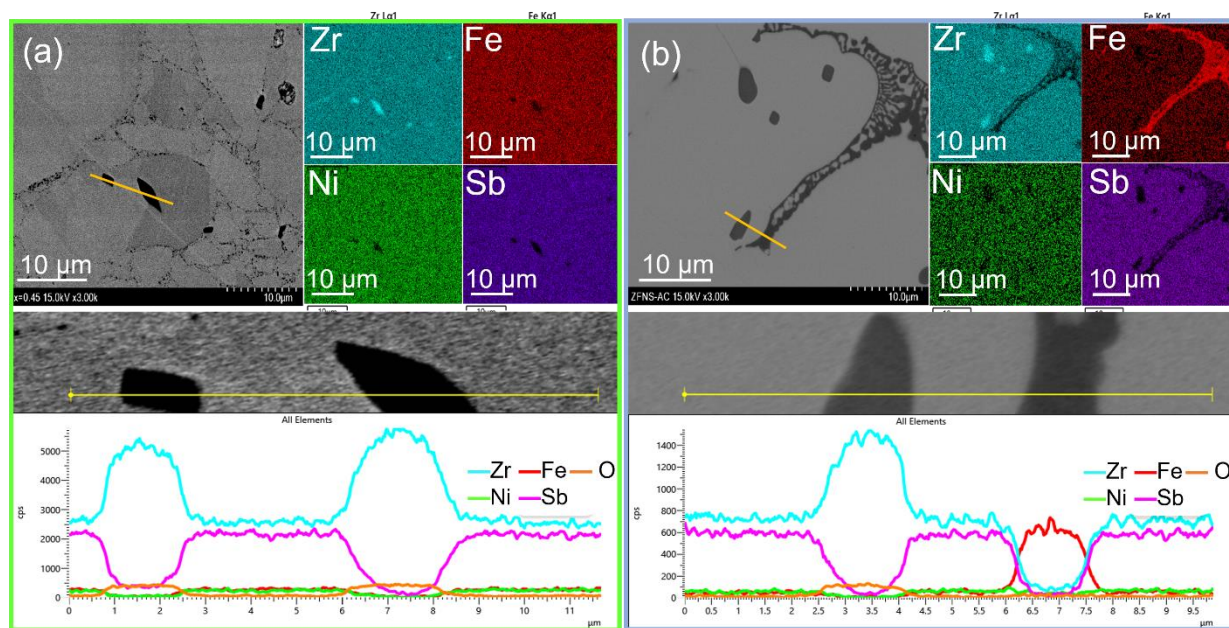


Figure S3 FESEM BSE images, corresponding elemental map spectra, and elemental line scan along the yellow lines in sample $x = 0.35$ (a) as synthesized, and (b) as cast.

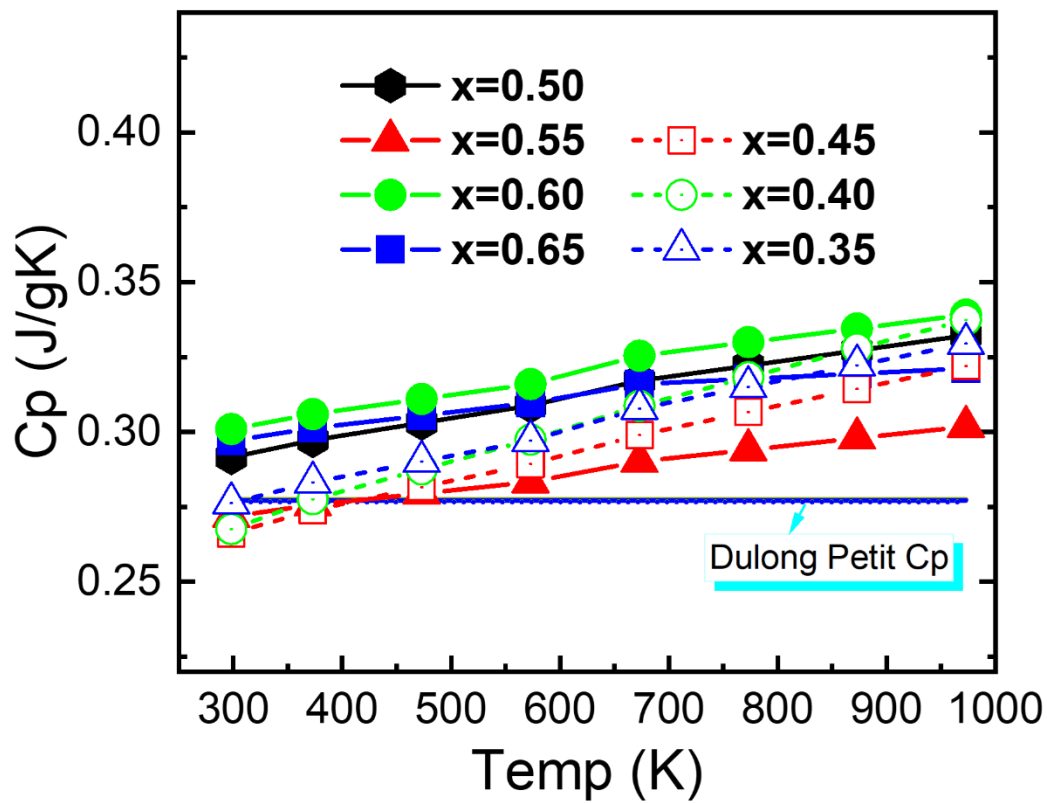


Figure S4 Measured temperature-dependent heat capacity and the Dulong Petit heat capacity of the fabricated $Zr_xFeNi_{1-x}Sb$ samples.