Changning Niu

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Research Interests

First-principles atomistic modeling of solid-state materials, thermodynamic properties of materials, kinetic properties of materials.

Professional Experience

2015– **Postdoctoral Researcher**, Ohio State University, Columbus, OH, USA
Materials Science and Engineering (Advisor: Maryam Ghazisaeidi)

Education

2015 **Ph.D.**, North Carolina State University, Raleigh, NC, USA
Materials Science and Engineering (Advisor: Douglas L. Irving)

2011 **B.Sc.**, University of Science and Technology Beijing, Beijing, China
Materials Physics (Minor: Information and Computational Science)

Peer-reviewed Publications

Journal articles

2017 **C. Niu**, W. Windl, and M. Ghazisaeidi. Multi-Cell Monte Carlo Relaxation method for predicting phase stability of alloys. *Scripta Materialia*, 132:9–12, Apr. 2017

2016 **C. Niu**, A. J. Zaddach, C. C. Koch, and D. L. Irving. First principles exploration of near-equiatomic NiFeCrCo high entropy alloys. *J. Alloy. Compd.*, 672:510–520, July 2016

A. J. Zaddach, **C. Niu**, A. A. Oni, M. Fan, J. M. LeBeau, D. L. Irving, and C. C. Koch. Structure and magnetic properties of a multi-principal element Ni–Fe–Cr–Co–Zn–Mn alloy. *Intermetallics*, 68:107–112, Jan. 2016

2015 **C. Niu**, A. J. Zaddach, A. A. Oni, X. Sang, J. W. Hurt III, J. M. LeBeau, C. C. Koch, and D. L. Irving. Spin-driven ordering of Cr in the equiatomic high entropy alloy NiFeCrCo. *Appl. Phys. Lett.*, 106(16):161906, Apr. 2015

X. Sang, E. D. Grimley, **C. Niu**, D. L. Irving, and J. M. LeBeau. Direct observation of charge mediated lattice distortions in complex oxide solid solutions. *Appl. Phys. Lett.*, 106 (6):061913, Feb. 2015

2014 K. M. Youssef, A. J. Zaddach, **C. Niu**, D. L. Irving, and C. C. Koch. A Novel Low-Density, High-Hardness, High-entropy Alloy with Close-packed Single-phase Nanocrystalline Structures. *Mater. Res. Lett.*, 3(2):95–99, Dec. 2014

2013 A. J. Zaddach, **C. Niu**, C. C. Koch, and D. L. Irving. Mechanical Properties and Stacking Fault Energies of NiFeCrCoMn High-Entropy Alloy. *JOM*, 65(12):1780–1789, 2013

Book chapters

2016 M. C. Gao, **C. Niu**, C. Jiang, and D. L. Irving. *High-Entropy Alloys*, chapter 10. Applications of Special Quasi-random Structures to High-Entropy Alloys. Springer, 2016

Presentations

Presented Talks

2015 C. Niu, A. J. Zaddach, A. A. Oni, X. Sang, J. W. Hurt III, J. M. LeBeau, C. C. Koch, and D. L. Irving. First principles studies of NiFeCrCoMn high entropy alloys. In *TMS*, Orlando, FL, Mar. 2015

2014 C. Niu, A. J. Zaddach, C. C. Koch, and D. L. Irving. First principles simulation of a NiFeCrCoMn high entropy alloy. In *TMS*, San Diego, CA, Feb. 2014

Contributed Talks

2015 C. Niu, A. J. Zaddach, A. A. Oni, X. Sang, J. W. Hurt III, J. M. LeBeau, C. C. Koch, and D. L. Irving. Probing the local structure of NiFeCrCo: synthesis, characterization, and simulation. In *TMS*, Orlando, FL, Mar. 2015

A. J. Zaddach, K. M. Youssef, C. Niu, D. L. Irving, and C. C. Koch. A low-density, single-phase high entropy alloy produced by mechanical alloying. In *TMS*, Orlando, FL, Mar. 2015

2014 A. J. Zaddach, C. Niu, J. M. LeBeau, C. C. Koch, and D. L. Irving. Low stacking fault energy high entropy alloys. In *TMS*, San Diego, CA, Feb. 2014

A. J. Zaddach, C. Niu, K. M. Youssef, D. L. Irving, and C. C. Koch. Stacking fault energies and mechanical properties of fcc high entropy alloys. In *TMS*, San Diego, CA, Feb. 2014

2013 D. L. Irving, C. C. Koch, C. Niu, and A. J. Zaddach. Preparation and simulation of fcc high entropy alloys. In *TMS*, San Antonia, TX, Mar. 2013