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Engineering & Scientific Consulting

Ming Yin, Ph.D.

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Professional Profile

Dr. Yin's areas of expertise include thermodynamic analysis, diffusion, metallurgy, material characterization, failure analysis, and corrosion of alloys, especially intermetallics. At Exponent, he focused on fracture analysis of metals and ceramics, solder and solder ball grid array (BGA) related issues, contamination analysis, corrosion of materials used in consumer electronics, and characterization of anode and cathode materials. The topic of his Ph.D. dissertation is the thermodynamics of selected intermetallic compounds. They were prepared through powder metallurgy or arc melting and characterized using calorimeters, XRD, dilatometry, SEM and EDS. Measured thermodynamic properties were compiled in a database to facilitate the design and utilization for other researchers.

Prior to joining Exponent, Dr. Yin was a Managing Process Engineer at CITIC Dicastal Co. Ltd., a world leading manufacturer of aluminum wheel hubs. He managed the design and optimization of process parameters in the foundry department, including the concentration of adding alloy elements, heat treating temperature and other processing conditions and parameters. He also led a team to design the foundry department for a new plant, including the process flow, plant layout, process parameters, equipment specifications, and employee training.

Academic Credentials & Professional Honors

Ph.D., Materials Science and Engineering, Illinois Institute of Technology (IIT), 2015

B.S., Powder Materials Science and Engineering, Central South University, 2010

Licenses and Certifications

ASQ Certified Reliability Engineer (CRE)

Publications

Ming Yin, P. Nash, J. A. Kaduk, J. C. Schuster, Experimental investigation of the Fe-Sn-Ti ternary phase diagram at 873 K, J. Alloys Compd. 693 (2017) 76-86

Ming Yin, J. Hasier, P. Nash, A Review of Phase equilibria in Heusler alloy systems containing Fe, Co, Ni, J Mat. Sci. 51 (2016) 50-70

Ming Yin, P. Nash, W. Chen, S. Chen, Standard enthalpies of formation of selected Ni₂YZ Heusler compounds, J. Alloys Compd. 660 (2016) 258-265

Ming Yin, P. Nash, The effect of an additional X element (Co, Cu, Fe, Pd) on the standard enthalpy of formation of the Heusler compound Ni₂MnSn, J Alloys Compd. 667 (2016) 184-190

Ming Yin, P. Nash, Enthalpies of formation of selected Fe₂YZ Heusler compounds, Intermetallics. 57 (2015) 34-40

Ming Yin, P. Nash, Enthalpies of formation of selected Pd₂YZ Heusler compounds, Intermetallics. 58 (2015) 15-19

Ming Yin, P. Nash, Standard enthalpies of formation of selected Ru₂YZ Heusler compounds, J. Alloys Compd. 634 (2015) 70-74

Ming Yin, P. Nash, Standard enthalpies of formation of selected XYSn half-Heusler compound, J. Chem. Thermodynamics 91 (2015) 1-7

Ming Yin, P. Nash, Standard enthalpies of formation of selected Rh₂YZ Heusler compounds, J. Alloys Compd. 650 (2015) 925-930

Ming Yin, S. Chen, P. Nash, Enthalpies of formation of selected Co₂YZ Heusler compounds, J. Alloys Compd. 577 (2013) 49-56

Ming Yin, P. Nash, S. Chen, Heat capacities of several Co₂YZ Heusler compounds, Thermochi. Acta, 574c (2013) 79-84

Ming Yin, Y. Du, C. Cui, H. Xu, L. Zhang, S. Liu, Diffusivities and atomic mobilities in fcc Al-Cu-Mn alloys, Int. J. Mater. Res. 103 (2011) 807-813

Presentations

2015.5 CALPHAD XLIV Loana, Italy

- The Effect of a Fourth Element (Pd, Al) on the Standard Enthalpies of Formation of the Heusler Compounds Ni₂MnSn

2014.6 CALPHAD XLIII Changsha, Hunan

- Standard Enthalpies of Formation of Half-Heusler Compounds XYSn (X = Co, Fe, Ir, Ni, Pd, Pt; Y = Hf, Mn, Ti, V, Zr)

2013.10 MS&T Montreal, Canada

- Experimental Determination of Enthalpies of Formation and Specific Heats to Populate a Thermodynamic Database

2013.3 AMAPPE Jacksonville, FL

- Collaboration on Scientific Research Course

2012.10 MS&T Pittsburgh, PA

- Enthalpies of Formation and Heat Contents of Heusler Alloys Co_2TiZ (Z= Al, Ga, Ge, Si, Sn)

Peer Reviews

Archives of Metallurgy and Materials

Computational Materials Science

Journal of Magnetism and Magnetic Materials

Journal of Material Science

Journal of Materials Engineering and Performance

Material Science and Engineering with Advanced Research- Electronic

Physica Status Solidi C: Current Topics in Solid State Physics

Thermochimica Acta