

**College of Engineering MS Theses (15) and PhD Dissertations (52)
between 1994-2012, students which utilized the UW-Madison
Cameca SX51 Electron Microprobe**

Benson

2006 - Tinjum, James – PhD -- Mineralogical properties of chromium ore processing residue and chemical remediation strategies

Bradley

1996 - Vijayaraghavan, Ravi – PhD – A model for evolution of as-cast microstructure in ductile iron alloys

Chang

1994 - Chen, Shuanglin – PhD – A methodology for the calculation of phase diagrams

1996 - Xie, Fanyou MS -- A study of phase equilibrium of the aluminum-iron-silicon system at the aluminum corner

1996 - Kim, Sungtae – PhD -- Diffusion in the NaAl phase

1996 - Lin, Chingfu – PhD – Thermodynamics and kinetics investigation of PdAl/ $\text{In}_{0.52}\text{Ga}_{0.48}\text{As}$ Schottky contact

1997 - Chen, David Yuxiao – PhD – Ohmic contacts to N-GaAs and N- $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}$: A thermodynamic approach

1998 - Liang, Haiyan – PhD – Thermodynamic modeling and experimental investigation of the Al-Cu-Mg-Zn quaternary system

1999 - Xie, Fanyou – PhD -- Solidification modeling and experimental investigation of Al-rich Al-Cu-Mg-Zn alloys

2000 – Huang, Mianliang – MS - Study on the defects in B2 compound PdIn

2001 - Yan, Xinyan – PhD -- Thermodynamic and solidification modeling coupled with experimental investigation of the multicomponent aluminum alloys

2001 - Daniel, Stephen L – PhD -- Thermodynamic modeling and experimental investigation of the aluminum-iron-magnesium-silicon quaternary alloy system

2001 - Ding, Ling – MS -- Experimental investigation of phase equilibria and interdiffusion coefficients in Ni-Mn system

2003 - Pelto, Chris – PhD -- The role of titanium aluminide in N-Gallium nitride ohmic contact technology

2003 - Ladwig, Peter – PhD -- Thermally activated reactions in thin-film magnetoresistive sensors

2004 - Yang, Ying – PhD -- Thermodynamic modeling and experimental investigation of the molybdenum-silicon-boron-titanium quaternary system

2004 - Huang, Mianliang – PhD -- Thermodynamic and kinetic study on intermetallic compounds PdIn and Pd_3In : bulk and thin film cases

2008 - Cao, Hongbo – PhD -- Application of computational thermodynamics in the study of Mg alloys and bulk metallic glasses

2008 - Zhu, Jun – PhD -- Thermodynamic description of multicomponent Ni-base superalloys containing Al, Cr, Ru and Pt: a computational thermodynamic approach coupled with experiments

2010 - Zhang, Chuan – PhD -- Thermodynamic modeling and experimental investigation of multicomponent nickel-based superalloys and magnesium alloys

Cooper

1996 - King, Todd T – PhD -- High-temperature mechanical and thermochemical responses of oxide-fluoromica laminates with application to fiber-reinforced ceramic composites

1998 - Lee, Jeff A – PhD – Internal friction/attenuation in polycrystalline olivine and equilibrated silicate partial melts

1998 - Cook, Glen – PhD -- Redox dynamics in multicomponent, iron-bearing silicate melts and glasses: Application to the float-glass processing of high-temperature silicate glass melts

2001 - Bledsoe, Mark – MS -- Float reaction between CU-37 at% Ge and sodium aluminoborosilicate glass melts

2005 - Everman, Rebecca – PhD -- The dynamic response of ionic iron-bearing multicomponent silicate melts to reducing environments: Kinetics and structure

2005 - Pettersen, Claire – MS -- Float reaction between Cu-36at%Sn and magnesium aluminosilicate and ZnO-doped magnesium aluminosilicate glass melts

Dumesic

2004 - He, Rong – PhD -- Studies of noble metal catalysts in gas and liquid phase for reactions involving carbon monoxide

Eom

2004 - Kim, Dong Min – PhD -- Epitaxial piezoelectric thick film heterostructures on silicon

2004 - Choi, Jung-Hoon – PhD -- Initial stage growth of heteroepitaxial oxide thin films on oxide and metal substrates

2010 - Baek, Seung Hyub – PhD -- Multifunctional oxide thin films for magnetoelectric and electromechanical applications

2010 - Folkman, Chad – PhD -- Spontaneous strain and ferroelectric-ferroelastic behavior in epitaxial bismuth ferrite thin films

Haimson

2005 - Lee, HiKweon – PhD -- Borehole breakouts in arkosic sandstones and quartz-rich sandstones

Hellstrom

1994 - Zhang, Wei – MS -- Cyclic strain impact on the residual electrical resistivity ratio of twisted high purity aluminum

1995 - Parrella, Ronald – MS -- Processing BSCCO precursors by spray pyrolysis and study of controlled phase assemblage and Ag additions in (Bi,Pb)₂₂₂₃ superconducting tapes

1996 - Wang, Weitung Welton – PhD -- A study of perovskite electrolytes and electrodes for intermediate-temperature solid oxide fuel cell applications

2007 - Senkowicz, Ben – PhD -- Optimizing critical current density through composition and microstructure in mechanically alloyed magnesium diboride

Kou

1997 - Tsaur, Shuenn-Ching – PhD -- Czochralski growth of gallium indium antimonide alloy crystals

2002 - Huang, Chen-Che – PhD -- Partially melted zone in aluminium welds

2006 - He, Jiajie – PhD -- Segregation control in Czochralski crystal growth

2008 - Yang, Young-Ki – PhD -- Macrosegregation in arc welds caused by dissimilar filler metals

2010 - Firouzidor, Vahid – PhD -- Joining of dissimilar metals by friction stir welding

Kuech

1998 - Li, Jiang – PhD – Surface and interface structure formation in III-V compound semiconductors grown by metal organic vapor phase epitaxy

2002 - Paulson, Charles – PhD -- Near-field scanning optical microscopic investigations of immiscibility effects and photoreflectance contrast in III-V semiconductor materials

2002 - Zhang, Ling – PhD -- Influence of impurities as surfactants on the growth of gallium nitride thin film by metal organic vapor phase epitaxy

2003 - Dwikusuma, Fransiska – PhD -- Sapphire surface preparation and GaN nucleation by hydride vapor epitaxy

2004 - Hawkins, Brian -- PhD -- Metal organic vapor phase epitaxy growth mechanisms of gallium antimonide and compositional grading in pseudomorphic gallium arsenide antimonide films

2006 - Khandekar, Anish – PhD -- Metalorganic vapor phase epitaxy of III-V heteroepitaxial systems : investigation of structural and chemical effects of lattice strain

2009 - Rathi, Manish – PhD -- Investigation of high Sb-content GaAs_{1-x}N_x-GaAs_{1-y}Sb_y heterostructures for long wavelength application

2010 - Jha, Smita – PhD -- Synthesis of narrow band-gap III-V semiconductors using metal-organic vapor phase epitaxy

2012 - Jacobsen, Heather – MS -- Ab initio study of the strain dependent thermodynamics of Bi doping in GaAs

Kulcinski

1998 - Harris-Kuhlman, Kim – PhD -- Trapping and diffusion of helium in lunar minerals

Lakes

2010 - Dong, Liang – PhD -- Negative stiffness and negative Poisson's ratio in barium titanate based ceramics

Li

2007 - Choi, Hong Seok – PhD -- Experimental investigations of nanosecond pulsed laser micromachining of metal using thin film microsensors

2009 - Sunya Nimityongskul, Brian – MS -- Mechanical property and microstructure of micro- and nano-particle reinforced magnesium alloys fabricated by ultrasonic cavitation based processing techniques

Matyi

1997 - Moran, Peter – PhD -- A method for interpreting high resolution 2-dimensional reciprocal space maps of Bragg-diffracted x-ray intensity in terms of the defect structure present in semiconductor heterostructures

Mawst

2008 - Huang, Juno Yu-Ting – PhD -- Type-II "W" quantum wells for mid-infrared emission

Perepezko

1996 - Mizoguchi, Toshiaki – MS -- Undercooling and heterogeneous nucleation behavior in cast iron

1997 - Yi, Seonghoon – PhD -- Phase equilibria and development of β/γ two phase microstructures in γ -based Ti-Al-Mo ternary alloys

1998 - Park, Joon Sik – PhD -- In-situ reaction synthesis and control during interdiffusion

2001 - Wu, Robert I-I – PhD -- Amorphous phase formation and nanostructure synthesis in aluminum-based alloys

2003 - Cho, Jae-Ik – PhD -- Microsegregation of copper in aluminium casting alloys

2003 – Sakidja, Ridwan – PhD -- Phase stability and transition metal addition in Mo-Si-B alloys

2005 - Santhaweesuk, Charuayporn – MS -- Particle-dendrite interactions and microstructural evolutions during the solidification of undercooled metal-matrix composites

2010 - Jarosinski, Megan – MS --

2011 - Williams, Peter - MS

Stone

1998 - Ohmann, David – MS -- Thermal sprayed copper coatings for use in thermal sprayed circuit boards (TSCBs)

Tinjum

2010 – Boecher, T. Alexander – MS -- Microanalytical techniques applied to the mineral phase quantification and structural analysis of chromite ore processing residue