

Curriculum Vitae

Bin Li

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Education

Ph. D. Metallurgy and Materials Engineering, University of Connecticut, 1999-2004.
M. S. Metallurgy and Materials Engineering, University of Connecticut, 1998-1999.
M. S. Metallurgy, Institute of Metal Research, Chinese Academy of Sciences, 1993-1996.
B. S. Mater Sci Eng, Huazhong Univ. of Sci. and Technol., China, 1986-1990.

Appointments

Associate Professor, Iowa State University, Ames, 2023 to date.
Associate Professor, University of Nevada, Reno, 2020 to 2023.
Assistant Professor, University of Nevada, Reno, 2014 to 2020.
Assistant Research Professor, Mississippi State University, 2010-2014.
Postdoctoral fellow, Dept. of Mater Sci Eng., Johns Hopkins University, 2006-2010.
Postdoctoral fellow, Dept. of Mater Sci Eng., University of Connecticut, 2004-2006.
Research scientist, Institute of Metal Research, Chinese Academy of Sciences, 1996-1998.
Welding engineer, Golden-Cup Automobile Company, Shenyang, China, 1990-1993.

Funding

- (1) NSF, CMMI-2032483. PI. “*Understanding Dislocation Motion and Plasticity via First Principles Simulations Towards Manufacturing of High Ductility Magnesium Alloys*”. \$469,200. Co-PI: Qi An. 09/01/2020 – 08/31/2023.
- (2) NSF, CMMI-2016263. PI. “*Resolving Twin-Slip Interaction Mechanisms in Hexagonal Close-Packed Metals*”. \$268,696. 08/01/2020 – 07/31/2023.
- (3) NSF, CMMI-1635088. PI. “*MEP / Design of Twinning Induced Plasticity (TWIP) Magnesium Alloys*.” \$467,544. 08/01/2016 – 07/31/2019.
- (4) NSF, CMMI-1506944. Lead PI. “*CDS&E / Collaborative Research: Fundamental Investigation of Zinc-Coating of Advanced High Strength Steels Directed by Multiscale Modeling and Experiments*.” \$900,000. Other PIs: Mark Horstemeyer (Mississippi State University), Mohsen Zaeem (Missouri Institute of Science and Technology). 09/01/2015 – 08/31/2018.

- (5) NSF, CMMI-1726897. “*MRI: Acquisition of Focused Ion Beam-Scanning Electron Microscope for Nanofabrication and Characterization.*” \$640,062. UNR cost share \$274,312. PI: Dhanesh Chandra. Co-PI: Bin Li, Sid Pathak, Andrew Geraci, and Mario Alpuche. 08/01/2017 – 07/31/2020.
- (6) DOE, DE-NE0009022. “*Infrastructure Support for Nanoscale in-situ Transmission Electron Microscopy Examination of Structure, Composition & Defects Evolution*”. \$433,228. PI: Yufeng Zheng. Co-PI: Bin Li. 10/01/2020 – 09/30/2023.
- (7) College of Engineering, University of Nevada, Reno. “*Acquisition of a new remote TEM operation & education system*”. PI: Yufeng Zheng. Co-PI: Bin Li. \$30,000. 2021.
- (8) College of Engineering, University of Nevada, Reno. “*Development of Advanced Manufacturing Laboratory*”. PI: Leon Liao. Co-PI: Bin Li, Jim La. \$139,000. 2017.
- (9) College of Engineering, University of Nevada, Reno. “*Acquisition of a New Mechanical Testing System*”. PI. \$55,000. 2019.
- (10) International Zinc Association, “*Site-Specific Analytical Transmission Electron Microscopy Study on Inhibition Layer Formation and Galvanneal Growth on Advanced High Strength Steels*”. PI. \$125,000. 2011-2014.
- (11) Army Research Office (ARO), “*Toward New Magnesium Alloy Design - Theoretical and Experimental Studies of the Influence of Alloying Elements on Deformation Twinning*”. Short Term Innovative Research (STIR). PI. \$47,752. 2011-2012.
- (12) US Army Engineering Research and Development Center (ERDC), “*Multi-Scale Material Modeling of Lightweight Metals under High Rate Loading Conditions*”. \$197,500. PI: Mark Horstemeyer. Co-PI: Bin Li, Hongjoo Rhee. 2011-2014.

Awards

NSHE (Nevada Systems of Higher Education) Rising Researcher Award, Nominated, 2017.
 Outstanding Reviewer Award, Scripta Materialia, 2016.
 Best Fundamental Research Award, Light Metals Division, TMS, 2013.

Teaching

IMSE 348: Solidification Processes. 2024 Spring. Co-teach (ISU).
 IMSE 690: Manufacturing of Lightweight Alloys. 2024 Spring (ISU).
 MSE 426: Materials Processing (UNR).
 MSE 361/761: Thermodynamics of Materials (UNR).
 MSE 461/661: Physical Metallurgy II – Mechanical Behavior of Materials (UNR).
 MSE 498: Materials Selection. 2022 Spring (UNR).
 MSE 482: Senior Design. 2019 Spring (UNR).

Journal Publications

1. Chen P, Li B*. Transmutation of zonal twinning dislocations during non-cozone {10-11} twin-twin interaction in magnesium. **Journal of Magnesium and Alloys**. 2024. In press.
2. He Y, Fang Z, Li B, Wang C, Mao SX. *In-situ* HRTEM observations of intermediate phase transformation in lattice reorientation in HCP rhenium. **Journal of Materials Science & Technology**. 2025 Jan 20;206:15–25.
3. Zhou S, Chen P, Zha M, Zhu Y, Li B, Wang HY. Sequential transmutation of prismatic dislocations during {11-22} twin-slip interaction in titanium. **Scripta Materialia**. 2023 Nov 1;236:115678.
4. Chulist R, Wójcik A, Sozinov A, Tokarski T, Faryna M, Schell N, Skrotzki W, Li B, Sehitoglu H, Li X, Maziarz W. Adaptive Phase or Variant Formation at the Austenite/Twinned Martensite Interface in Modulated Ni–Mn–Ga Martensite. **Advanced Functional Materials**. n/a(n/a):2307322.
5. Li B*, Goldman A, Xu J. Reactive diffusion of lithium in silicon in anode materials for Li-ion batteries. **Materialia**. 2023 Jun 1;29:101796.
6. Li B*, Chen K. Grain boundary migration facilitated by phase transformation and twinning in face-centered cubic metals. **J Mater Sci**. 2023 Oct 1;58(37):14740–57.
7. Zhou S, Chen P, Zha M, Zhu Y, Li B, Wang HY. Sequential transmutation of prismatic dislocations during {11-22} twin-slip interaction in titanium. **Scripta Materialia**. 2023 Nov 1;236:115678.
8. Yang Y, Liu F, Chen K, Liu B, Shan Z, Li B*. Dissociation of edge and screw pyramidal I and II dislocations in magnesium. **Journal of Magnesium and Alloys**. 2023 Dec 1;11(12):4498–512.
9. Li B*, Chen KF. *Grain boundary shear coupling facilitated by phase transformation and twinning in face-centered-cubic metals*. **Acta Materialia**. 2022. Submitted.
10. Yang Y, Liu F, Chen KF, Liu BY, Shan ZW*, Li B*. *Dissociation of edge and screw pyramidal I and II dislocations in magnesium*. **Journal of Magnesium and Alloys**. 2022. Invited and to be submitted in November.
11. Li B*, Chen KF. *Asymmetric (11-21)[11-2-6] twin boundary and migration mechanism in hexagonal close-packed titanium*. **Acta Materialia**. 2022 Jun 15;232:117943.
12. Chen KF, Mun S, Baskes M, Horstemeyer MF, Li B. *Development of 2NN MEAM potential for Fe-Al and atomistic investigation of surface and interface properties of the inhibition layer in galvanized Fe*. **Modelling and Simulation in Materials Science and Engineering**. 2022, 30:045001.

13. Liu BY, Zhang Z, Yang N, Liu F, Li B, Chen P, Wang Y, Peng JH, Li J, Ma E, Shan ZW. *Rejuvenation of plasticity by deformation graining in magnesium*. **Nature Communications**. 2022, 13(1):1060.
14. Li J, Sui M*, Li B*. *A half-shear-half-shuffle mechanism and the single-layer twinning dislocation for $\{11\text{-}22\}\langle 11\text{-}2\text{-}3\rangle$ mode in hexagonal close-packed titanium*. **Acta Materialia**. 2021 Sep 1;216:117150.
15. Li B*, Sun Q, Zhang XY. *Lattice correspondence analysis on the formation mechanism for partial stacking faults in hexagonal close-packed metals*. **Computational Materials Science**. 2021 Oct 1;198:110684.
16. Li B*, Leung J. *Lattice transformation in grain boundary migration via shear coupling and transition to sliding in face-centered-cubic copper*. **Acta Materialia**. 2021 Aug 15;215:117127.
17. Chen K, Aslam I, Li B*, Goodwin FE, Horstemeyer M. *Effect of Fuel-to-Air Ratio on Oxidation and Interfacial Structure in Galvanizing of a Dual-Phase Steel*. **SAE Int J Mater Manuf**. 2021 Apr 19;14(3):05-14-03-0021.
18. Y. He, B. Li, C. Wang, S.X. Mao. *Direct observation of dual-step twinning nucleation in hexagonal close-packed crystals*. **Nature Communications**. 2020 May 18;11(1):2483.
19. B. Li*, Y.D. Shen, Q. An. *Structural origin of reversible martensitic transformation and reversible twinning in NiTi shape memory alloy*. **Acta Materialia**. 2020 Oct 15;199:240–52.
20. P. Chen, J. Ombogo, B. Li*. *Dislocation \leftrightarrow twin transmutations during interaction between prismatic slip and $\{10\text{-}11\}$ twin in magnesium*. **Acta Materialia**. 2020 Mar 1;186:291–307.
21. F. Zhang, Y. Ren, Z. Yang, H. Su, Z. Lu, C. Tan, H. Peng, K. Watanabe, B. Li, M.R. Barnett, M. Chen. *The interaction of deformation twins with long-period stacking ordered precipitates in a magnesium alloy subjected to shock loading*. **Acta Materialia**. 2020 Apr 15;188:203–14.
22. C.L. Williams, C. Kale, S.A. Turnage, L.S. Shannahan, B. Li, K.N. Solanki, R. Becker, T.C. Hufnagel, K.T. Ramesh. *Real-time observation of twinning-detwinning in shock-compressed magnesium via time-resolved in situ synchrotron XRD experiments*. **Phys Rev Materials**. 2020 Aug 21;4(8):083603.
23. B.Y. Liu, F.L. Liu, N. Yang, X.B. Zhai, L. Zhang, Y. Yang, B. Li*, J. Li, E. Ma, J.F. Nie*, Z.W. Shan*. *Large Plasticity in Magnesium Mediated by Pyramidal Dislocations*. **Science**. 365 (2019) 73-75.
24. K.F. Chen, I. Aslam, B. Li*, R.L. Martens, J.R. Goodwin, F. Goodwin, M.F. Horstemeyer. *Lift-off of surface oxides during hot-dip galvanizing of a dual-phase steel in a zinc bath with 0.125% aluminum*. **Met Trans A**. 59 (2019)3748-3757.

25. Y.D. Shen, H.W. Yang, B. Li, Q. An. *First principles high-throughput screening to enhance the ductility of lightweight magnesium alloys*. **Phys Rev Mater.** 3 (2019) 053603.
26. P. Chen, F. Wang, B. Li*. *Transitory phase transformations during {10-12} twinning in titanium*. **Acta Mater.** 171 (2019) 65–78.
27. P. Chen, F. Wang, B. Li*. *Dislocation absorption and transmutation at {10-12} twin boundaries in deformation of magnesium*. **Acta Mater.** 164 (2019) 440–453.
28. P. Chen, F. Wang, B. Li*. *Misfit strain induced phase transformation at a basal/prismatic twin boundary in deformation of magnesium*. **Comput Mater Sci.** 164 (2019) 186–194.
29. P. Chen, F. Wang, J. Ombogo, B. Li*. *Formation of $60^\circ\langle 01-10\rangle$ boundaries between {10-12} twin variants in deformation of a magnesium alloy*. **Mater Sci Eng A.** 739 (2019) 173–185.
30. B. Mao, Y. Liao, B. Li, *Abnormal twin-twin interaction in an Mg-3Al-1Zn magnesium alloy processed by laser shock peening*, **Scripta Mater.** 165 (2019) 89–93.
31. B. Mao, A. Siddaiah, X. Zhang, B. Li, P.L. Menezes, Y. Liao, *The influence of surface pre-twinning on the friction and wear performance of an AZ31B Mg alloy*, **Applied Surface Science.** 480 (2019) 998–1007.
32. B. Mao, B. Li, D. Lin, Y. Liao, *Enhanced room temperature stretch formability of AZ31B magnesium alloy sheet by laser shock peening*, **Mater Sci Eng A.** 756 (2019) 219–225.
33. B. Mao, Y. Liao, B. Li, *Gradient twinning microstructure generated by laser shock peening in an AZ31B magnesium alloy*, **Applied Surface Science.** 457 (2018) 342–351.
34. P. Chen, B. Li*, D. Culbertson, Y. Jiang. *Negligible effect of twin-slip interaction on hardening in deformation of a Mg-3Al-1Zn alloy*. **Mater Sci Eng A.** 729 (2018) 285–293.
35. F.X. Wang, B. Li*. *Atomistic calculations of surface and interfacial energies of Mg17Al12–Mg system*. **Journal of Magnesium and Alloys.** 6 (2018) 375–383.
36. F.X. Wang, B. Li*, *Origin of deflection of precipitates during interaction with a migrating twin boundary in magnesium alloys*, **Comput Mater Sci.** 154 (2018) 472–480.
37. P. Chen, B. Li*, D. Culbertson, Y. Jiang. *Contribution of extension twinning to plastic strain at low stress stage deformation of a Mg-3Al-1Zn alloy*. **Mater Sci Eng A.** 709 (2017) 40-45.
38. Q. Sun, Q.W. Zhang, B. Li*, X.Y. Zhang. *Non-dislocation-mediated basal stacking faults inside $\{10\bar{1}1\}\langle 10\bar{1}\bar{2}\rangle$ twins*. **Scripta Mater.** 141 (2017) 85-88.
39. B. Li*, Q.W. Zhang, S.N. Mathaudhu. *Basal-pyramidal dislocation lock in deformed magnesium*. **Scripta Mater.** 134 (2017) 37-41.
40. S.A. Brauer, W.R. Whittington, K.L. Johnson, B. Li, H. Rhee, P.G. Allison, C.K. Crane, M.F. Horstemeyer. *Strain Rate and Stress-State Dependence of Gray Cast Iron*. **Journal of Engineering Materials and Technology.** 139 (2017) 021013.

41. H. Pan, Q. Huang, G. Qin, H. Fu, M. Xu, Y. Ren, J. She, B. Song, B. Li, **Journal of Alloys and Compounds**. 692 (2017) 898–902.
42. I. Aslam, B. Li*, R.L. Martens, J.R. Goodwin, H.J. Rhee, F. Goodwin. *Transmission electron microscopy characterization of the interfacial structure of a galvanized dual-phase steel*. **Materials Characterization**. 120 (2016) 63–68.
43. B. Li* and X.Y. Zhang*. *Twinning with zero twinning shear*. Viewpoint Paper. **Scripta Mater** 125 (2016) 73-79.
44. X. Zhang, B. Li*, and Q. Liu. *Non-equilibrium basal stacking faults in hexagonal close-packed metals*. **Acta Mater** 90 (2015) 140-150.
45. X.Y. Zhang, B. Li*, J. Tu, Q. Sun, and Q. Liu. *Non-classical Twinning Behavior in Dynamically Deformed Cobalt*. **Materials Research Letters** 3 (2015) 142-148.
46. B. Li*, M. Liao, Q. Ma, and Z. McClelland. *Structure of grain boundaries with 30°[0001] misorientation in dynamically recrystallized magnesium alloys*. **Comput Mater Sci**. 101 (2015) 175-180.
47. Q.W. Zhang, B. Li*. *Torsional behavior of single-walled carbon nanotubes*. **Carbon** 94 (2015) 826-835.
48. Z. McClelland, B. Li*, S.J. Horstemeyer, S. Brauer, A.A. Adedoyin, L.G. Hector, Jr., M.F. Horstemeyer. *Geometrically necessary twins in bending of a magnesium alloy*. **Mater Sci Eng A**. 645 (2015) 298-305.
49. B.Y. Liu, J. Wang, B. Li, E. Ma, J. Sun, X.Y. Zhang, Z.W. Shan. *Twinning-like lattice reorientation without a crystallographic twinning plane*. **Nature Communications** 5 (2014) 3297.
50. K. Eswar Prasad, B. Li, N. Dixit, M. Shaffer, S.N. Mathaudhu, K.T. Ramesh. *The dynamic flow and failure behavior of magnesium and magnesium alloys*. **JOM** 66 (2014) 291 - 304.
51. B. Li*, Z. McClelland, S.J. Horstemeyer, I. Aslam, P.T. Wang, M.F. Horstemeyer. *Time dependent springback of a magnesium alloy*. **Materials and Design** 2015 (66) 575-580.
52. Q. Ma, B. Li, W.R. Whittington, A.L. Oppedal, E.B. Marin, P.T. Wang, M.F. Horstemeyer. *Texture evolution during dynamic recrystallization in a magnesium alloy at 450 °C*. **Acta Mater** 67 (2014) 102-115.
53. M. Liao, B. Li, M.F. Horstemeyer. *Interaction between a basal dislocation and a Mg₁₇Al₁₂ precipitate*. **Metall Mater Trans A** 45A (2014) 3661-3669.
54. I. Aslam, B. Li, Z. McClelland, S.J. Horstemeyer, Q. Ma, P.T. Wang, M.F. Horstemeyer. *Three point bending behavior of a ZEK100 Mg alloy at room temperature*. **Mater Sci Eng A** 590 (2014) 168-173.

55. B. Li*, X.Y. Zhang*. *Global strain generated by shuffling-dominated $\{10\bar{1}2\}\{10\bar{1}1\}$ twinning.* **Scripta Mater** 71 (2014) 45-48.
56. M. Pozuelo, S.N. Mathaudhu, S. Kim, B. Li, W.H. Kao, J.-M. Yang. *Deformation Twins in a Nanocrystalline Magnesium Alloy Processed by Cryomilling.* **Phil Mag Lett** 93 (2013) 640-647.
57. Q. Ma, B. Li, Z. McClelland, S.J. Horstemeyer. *Negative strain rate sensitivity of twinning in a magnesium alloy at high temperature.* **Metall Mater Trans A** 44A (2013) 4480-4485.
58. M. Liao, B. Li, M.F. Horstemeyer. *Interaction between a prismatic dislocation and a $Mg_{17}Al_{12}$ precipitate in magnesium.* **Computational Mater Sci** 79 (2013) 534-539.
59. B. Li. *Formation of helicity in an armchair single-walled carbon nanotube during tensile loading.* **Computational Mater Sci** 74 (2013) 27-32.
60. Q. Ma, W. Mao, B. Li, P.T. Wang, M.F. Horstemeyer. *Substructure and texture evolution in an annealed aluminum alloy at medium Strains.* **Metall Mater Trans A** 44 (2013) 4404-4415.
61. B. Li*, Q. Ma, Z. McClelland, S.J. Horstemeyer, W.R. Whittington, S. Brauer, P.G. Allison. *Twin-like domains and fracture in deformed magnesium.* **Scripta Mater** 69 (2013) 493-496.
62. M. Liao, B. Li, M.F. Horstemeyer. *Unstable dissociation of a prismatic dislocation in magnesium.* **Scripta Mater** 69 (2013) 246-249.
63. Q. Ma, B. Li, A.L. Oppedal, W. Whittington, S.J. Horstemeyer, E.B. Marin, P.T. Wang, M.F. Horstemeyer. *Strain rate dependence of twinning and effect on microstructure at 450 °C in a magnesium alloy.* **Mater Sci Eng A** 559 (2013) 314-318.
64. X.Y. Zhang, B. Li*, X.L. Wu, Y.T. Zhu, Q. Ma, Q. Liu, P.T. Wang, M.F. Horstemeyer. *Twin boundaries showing very large deviations from the twinning plane.* **Scripta Mater** 67 (2012) 862-865.
65. B. Li*, S.P. Joshi, O. Almagri, Q. Ma, K.T. Ramesh, T. Mukai. *Rate-Dependent Hardening Due to Twinning in Ultrafine-Grained Magnesium Alloy.* **Acta Mater** 60, 2012: 1818-1826.
66. J.C. Baird, B. Li, S. Yazdan Parast, S.J. Horstemeyer, L.G. Hector Jr., P.T. Wang, M.F. Horstemeyer. *Localized Twin Bands in Sheet Bending of A Magnesium Alloy.* **Scripta Mater** 67, 2012: 471-474.
67. Q. Ma, H. El Kadiri, A.L. Oppedal, J.C. Baird, B. Li, M.F. Horstemeyer, S.C. Vogel. *Twinning Effects in a Rod-Textured AM30 Magnesium Alloy.* **Int J Plasticity** 29 (2012) 60-76.
68. B. Li*, H. El Kadiri, M.F. Horstemeyer. *Extended Zonal Dislocations Mediating $\{11\bar{2}2\}\{11\bar{2}3\}$ twinning in Titanium.* **Philo Mag** 92, 2012: 1006-1022.

69. E. Huskins, B.Y. Cao, B. Li, K.T. Ramesh. *Temperature-Dependent Mechanical Response of an UFG Aluminum Alloy at High Rates*. **Experimental Mechanics** **52**, 2012: 185-194.
70. Q.C. Ma, B. Li, E. Marin, S.J. Horstemeyer. *Twinning Induced Dynamic Recrystallization in a Magnesium Alloy Extruded at 450°C*. **Scripta Mater** **65** (2011) 823-826.
71. B.Q. Li, B. Li, Y.B. Wang, M.L. Sui, E. Ma. *Twinning mechanism via synchronized activation of partial dislocations in face-centered-cubic materials*. **Scripta Mater** **64** (2011) 852-855.
72. B. Li*, P.F. Yan, M.L. Sui, E. Ma. *Transmission electron microscopy study of stacking faults and their interaction with pyramidal dislocations in deformed magnesium*. **Acta Mater** **58** (2010) 173-179.
73. B. Li*, E. Ma. *Atomic shuffling dominated mechanism for deformation twinning in magnesium*. **Phys Rev Lett** **103** (2009) 035503.
74. B. Li*, E. Ma. *Zonal dislocations mediating $\{10\bar{1}1\}\{10\bar{1}\bar{2}\}$ twinning in magnesium*. **Acta Mater** **57**, 2009: 1734-1743.
75. B.Q. Li, M.L. Sui, B. Li, E. Ma, S.X. Mao. *Reversible twinning in pure aluminum*, **Phys Rev Lett** **103** (2009) 205504.
76. B. Li*, B.Y. Cao, K.T. Ramesh, E. Ma. *A nucleation mechanism of deformation twins in pure aluminum*. **Acta Mater** **57** (2009) 4500-4507.
77. B. Li*, E. Ma. *Pyramidal slip in magnesium: dislocations and stacking fault on the $\{10\bar{1}1\}$ plane*. **Philo Mag** **89** (2009) 1223-1235.
78. C.M. Byer, B. Li, B.Y. Cao, K.T. Ramesh. *Microcompression of single crystal magnesium*. **Scripta Mater** **62**, 2010: 536-539.
79. B. Li*, S. Joshi, K. Azevedo, E. Ma, K.T. Ramesh, R.B. Figueiredo, T.G. Langdon. *Dynamic testing at high strain rates of an ultrafine-grained magnesium alloy processed by ECAP*. **Mater Sci Eng A** **517**, 2009: 24-29.
80. X.L. Wu, B. Li, E. Ma. *Vacancy clusters in ultra-fine grained Al by severe plastic deformation*. **Appl Phys Lett** **91**, 2007: 141908.
81. B. Li*, E. Ma, K.T. Ramesh. *Dislocation configurations in an extruded ZK60 magnesium alloy*. **Metall Mater Trans A**, 39A, 2008: 2607.
82. B. Li*, H.D. Brody and A. Kazimirov. *Real time observation of dendrite coarsening in Sn-13%Bi alloy by synchrotron microradiography*. **Phys Rev E** **70**, 2004: 062602.
83. B. Li*, H.D. Brody and A. Kazimirov. *Real time study of dendrite coarsening in Sn-13%Bi alloy by synchrotron microradiography*. **Metall Mater Trans A** **38A**, 2007: 599.
84. B. Li*, H.D. Brody and A. Kazimirov. *Synchrotron microradiography of temperature gradient zone melting in Sn-13%Bi alloy*. **Metall Mater Trans A** **37A**, 2006: 1039.

85. B. Li*, H.D. Brody, D.R. Black, H.E. Burdette, C. Rau. *Real time observation of dendritic solidification in alloys by synchrotron microradiography*. **J Phys D: Appl. Phys**, 39, 2006: 4450.
86. B. Li*, H.D. Brody, D.R. Black, H.E. Burdette, C. Rau. *A compact design of a temperature gradient furnace for synchrotron microradiography*. **Meas Sci Technol** 17, 2006: 1883.
87. B. Li*, X.M. Zhang, P.C. Clapp and J.A. Rifkin. *Molecular dynamics simulation of effects of lattice defects on martensite nucleation*. **J Appl Phys** 95, 2004: 1698.
88. B. Li*, P.C. Clapp, J.A. Rifkin and X.M. Zhang. *Molecular dynamics simulation of stick-slip*, **J Appl Phys** 90, 2001: 3090.
89. B. Li*, P.C. Clapp, J.A. Rifkin and X.M. Zhang. *Molecular dynamics calculation of heat dissipation during sliding friction*, **International Journal of Heat and Mass Transfer** 46, 2003: 37.
90. X.M. Zhang, J. Fernandez, J.M. Guilemany, B. Li, M. Liu and X.W. Sha. *Nature of two-way shape memory effect in shape memory alloys*, **Recent Research Developments in Materials Science** 2, 2001: 79.
91. X.M. Zhang, B.Li, X.W. Sha, Z.Q. Sun, R. Li. *Simulations of martensite nucleation at dislocations*. **Journal of Materials Science and Technology** 16, 2000: 370.
92. B. Li, X.M. Zhang and Y.Y. Li. *Molecular dynamics simulation of low angle boundaries*. **Acta Physica Sinica Acta Physica Sinica** (overseas edition), 7(8), 1998: 583.
93. B. Li, X.M. Zhang and Y.Y. Li. *Molecular dynamics simulation of the effect of low angle grain boundaries on martensite nucleation*. **Progress in Natural Sciences** 9, 1999: 637, in Chinese.
94. B. Li, X.M. Zhang, X.W. Sha and Y.Y. Li. *Molecular dynamics simulation of pseudoelasticity in NiAl alloy*. **Acta Metallurgica Sinica** 34, 1998: 923. in Chinese.
95. B. Li, X.M. Zhang, R. Li and Y.Y. Li. *Molecular dynamics simulation of martensite nucleation at a dislocation dipole*. **Acta Metallurgica Sinica**, 34(8), 1998: 813, in Chinese.
96. Sha Xianwei, Li Bin, Zhang Xiumu and Li Yiyi, *Simulation of transformation mechanism of martensites in Ni_{62.5}Al_{37.5} Alloy*, **Science in China E**, 41(2), 1998: 13, in Chinese.
97. Sha Xianwei, Li Bin, Zhang Xiumu and Li Yiyi, *Simulation of transformation mechanism of martensites in Ni_{62.5}Al_{37.5} Alloy*, **Science in China E** (overseas edition), 28(1), 1998: 26.
98. X.W. Sha, X.M. Zhang, B. Li and Y.Y. Li. *Computer simulation of equilibrium structure of alloys*. **Computer and Applied Chemistry** 15, 1998: 9. in Chinese.
99. X.W. Sha, B. Li, X.M. Zhang and Y.Y. Li. *Molecular dynamics simulation of the effect of a single edge dislocation on martensite nucleation*. **Acta Metallurgica Sinica**, 33(11), 1997: 1, in Chinese

100. X.W. Sha, X.M. Zhang, B. Li and Y.Y. Li. *Molecular dynamics simulation of stress induced martensite nucleation in NiAl alloy*. **Journal of Iron and Steel**, 9(6), 1997: 41. in Chinese.
101. Z.C. Wang, B. Li, Y. Cui, *The cavitation behavior of several cladding materials*. **Abrasion and Cavitation in Water Power Generators**, 33, 1996: 65. in Chinese.
102. Z.C. Wang, Y.N. Liang, B. Li, *The microstructure of GB1 cladding metal and the effect of rare earth elements*, **Abrasion and Cavitation in Water Power Generators**, 32, 1995: 67. in Chinese.

Invited Talks

1. B. Li, "Pyramidal dislocations in deformation of single crystal Mg". TMS 2020. San Diego.
2. B. Li, "*In-situ TEM and atomistic simulation of pyramidal dislocations in deformation of single crystal Mg*". Plasticity 2020. Mexico. 2020.
3. B. Li, "Important issues in deformation twinning". Plasticity 2019. Panama.
4. B. Li, "Design of ductile Mg alloys by tuning hard $\langle c+a \rangle$ dislocations into easy ones".
5. B. Li, "*Twinning-based design and processing of magnesium alloys*". FiMPART 2017. Bordeaux, France.
6. B. Li, "*Twinning mechanisms in hexagonal close-packed metals*", Shanghai Jiaotong University, China, 2016.
7. Li, B., "*Shear and shuffle in deformation twinning*", Chongqing University, China, 2016.
8. B. Li, *Twinning with zero twinning shear*. Xi'an Jiaotong University, China, 2016.
9. B. Li, "*Geometrically necessary twins in sheet bending of a Mg alloy*", TMS 2015, Orlando.
10. B. Li, H.D. Brody and A. Kazimirov, *Real time microradiography of dendrite growth and coarsening in Sn-13%Bi alloy by synchrotron radiation*. Cornell High Energy Synchrotron Source User Meeting, Ithaca, New York, 2004.
11. B. Li, H.D. Brody, D.R. Black and H.E. Burdette, *Real time observations of dendritic solidifications in alloys by synchrotron microradiography*, APS Users Science Seminar, Argonne National Laboratory, Chicago, 2004.
12. H.D. Brody and B. Li, *Real time observation of dendritic solidification in Sn-13%Bi alloy by microradiography*, Gordon Research Conference, Plymouth, New Hampshire, 2002.

Conference Presentations

1. B. Li, “*Effects of homogenization on structure and property relations of an indirect extruded ZE20 Mg alloy*”, The Minerals, Metals and Materials Society. Nashville, TMS 2016.
2. B. Li, “*Site-specific studies on the interfacial structures of galvanized dual phase steels*”, The Minerals, Metals and Materials Society. Nashville, TMS 2016.
3. B. Li, “*Twinning with zero twinning shear*”. Plasticity 2016, Hawaii.
4. B. Li, *Anomalous Twin Bands in Sheet Bending of an AZ31 Magnesium Alloy*, TMS 2012, Orlando, FL.
5. B. Li, X.Y. Zhang, S.N. Mathaudhu, P.T. Wang, M.F. Horstemeyer, *Structural Origin of Reversible Twinning, Non-Schmid Effect, Incoherent Twin Boundaries and Texture in HCP Metals*, TMS 2012, Orlando, FL.
6. B. Li, *Twinning Mechanisms in Hexagonal Close-Packed Metals*, TMS 2012, Orlando, FL.
7. B. Li, *Extended Zonal Dislocations Mediating $\{11\bar{2}\bar{2}\}\{11\bar{2}\bar{3}\}$ Twinning*, TMS 2011, San Diego, CA.
8. B. Li, X.Y. Zhang, H. El Kadiri, M.F. Horstemeyer, *Twinning Without a twinning Plane*, TMS 2011, San Diego, CA.
9. B. Christopher, M.A. Tschopp, H. El Kadiri, B. Li, *Influence of Crystallographic Orientation on Twin Nucleation in Single Crystal Magnesium*, TMS 2011, San Diego, CA.
10. E. Marin, C. Bouvard, A.A.H. Parkar, Q.C. Ma, B. Li, P. Wang, M.F. Horstemeyer, *Extrusion Modeling of AM30 Magnesium Alloy*, ICME 2011, Seven Springs, PA.
11. B. Li, E. Ma, K.T. Ramesh, *Dislocations and Their Configurations in Mg and Mg Alloys*, TMS, San Francisco, 2009.
12. S. Mathaudhu, M. Al-Maharbi, D. Foley, B. Li, K. Hartwig, E. Ma, I. Karaman, L. Kecskes, *Low Temperature Processing of Pure Mg by Equal Channel Angular Extrusion*, TMS, San Francisco, 2009.
13. B. Li, E. Ma, *Lattice Reconstruction – A Crystallographic Model for Grain Reorientation in HCP Magnesium*, TMS, San Francisco, 2009.
14. B. Li, E. Ma, *Twinning Dislocations and Twin/Matrix Interfacial Structure in HCP Metals*, TMS, San Francisco, 2009.
15. B. Li, E. Ma, *Slip Paths of $\langle c+a \rangle$ Dislocations and Stacking Faults in HCP Metals*, TMS, San Francisco, 2009.
16. B. Li, *Slip paths of $\langle c+a \rangle$ dislocations, stacking faults, and twin nucleation in HCP metals*, TMS, New Orleans, 2008.
17. B. Li, *Deformation behavior of ultrafine-grained ZK60 Mg alloy at high strain rates*. TMS, New Orleans, 2008.
18. E. Ma, X.L. Wu, B. Li, *Vacancies by severe plastic deformation and their effects in ultrafine-grained Al*, TMS, New Orleans, 2008.
19. B. Li, *Real Time Microradiography of Dendritic Solidification in Alloys*, The Fifth International Conference of Synchrotron Radiation in Materials Science, Chicago, 2006.

20. B. Li and H.D. Brody, *Real time observation of dendrite growth in Sn-13%Bi alloy by microradiography*, TMS Fall Meeting, Indianapolis, 2001.

Advising Students

Qiwei Zhang, Ph.D., University of Nevada, Reno. 2018.
Kefan Chen, Ph.D., University of Nevada, Reno. 2022.
Yang Yang, Ph.D., University of Nevada, Reno. 2022.
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Peng Chen, Ph.D., University of Nevada, Reno. 2019.
Jamie Obomgo, Master's, University of Nevada, Reno. 2018.
Imran Aslam, Ph.D., CAVS, Mississippi State University.
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Shiraz Mujahid, undergraduate, CAVS, Mississippi State University.
Logan Shanahan, undergraduate, Dept. of Mech. Eng. Johns Hopkins University. 2009.
Omar Almagri, undergraduate, Dept. of Mech. Eng. Johns Hopkins University. 2008.
Eric Lopez, undergraduate, Dept. of Mat. Sci. Eng., Johns Hopkins University. 2007.
Kyle Azevedo, undergraduate, Dept. of Mech. Eng. Johns Hopkins University. 2007.
Michael Smutnick, undergraduate, Dept. of Mat. Sci Eng., University of Connecticut, 2003.

Professional Services

Review service for Journals:

Scientific Report;
Acta Materialia;
Materials Letters;
International Journal of Plasticity;
Computational Materials Science;
Crystals;
Metals;

International Journal of Heat and Mass Transfer;
International Journal of Thermal Sciences;
Journal of Alloys and Compounds;
Journal of Materials Research;
Materials Research Letters;
Materials Science and Engineering A;
Materials Characterization;
Metallurgical Materials Transactions A;
Philosophical Magazine Letters;
Proceedings of the Royal Society A;
Journal of Rare Metals;
Scripta Materialia.

Review service for funding agencies:

National Science Foundation;
Department of Energy;
Army Research Office;
Swiss National Science Foundation;
Swiss National Supercomputing Centre;
Center for the Advancement of Science in Space, NASA.

Editorial Board Member:

Materials Letters

Membership of professional organizations:

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