



Brent Fultz Barbara and Stanley Rawn, Jr., Professor of Materials Science and Applied Physics
Dept. of Applied Physics and Materials Science
Keck Laboratory, mail 138-78, rm 239
California Institute of Technology, Pasadena, California 91125
btf@caltech.edu <http://www.caltech.edu/~matsci/btf/Fultz1.html>

Education

B.Sc. Physics, Massachusetts Institute of Technology, Cambridge, MA
Ph.D. Engineering Science, University of California, Berkeley, CA 1982
Postdoctoral Fellow, 9/82-12/82, Materials and Molecular Research Div., Lawrence Berkeley Lab

Employment

12/82-10/85 Staff Scientist II, Materials and Molecular Research Div., Lawrence Berkeley Lab
10/85- Assistant Professor of Materials Science, Associate Prof. of Materials Science, Prof. of
Materials Science and Applied Physics, Rawn Professor, California Institute of Technology

Five Publications

1. F. Körmann, B. Grabowski, B. Dutta, T. Hickel, L. Mauger, B. Fultz, and J. Neugebauer "Temperature dependent magnon-phonon coupling in bcc Fe from theory and experiment," *Phys. Rev. Lett.* **113**, 165503 (2014).
2. L. Mauger, M.S. Lucas, J.A. Muñoz, S.J. Tracy, M. Kresch, Yuming Xiao, Paul Chow, and B. Fultz, "Nonharmonic Phonons in alpha-Iron at High Temperatures," *Physical Review B* **90**, 064303 (2014).
3. S.H. Lohaus, M.B. Johnson, P.F. Ahnn, C.N. Saunders, H.L. Smith, M.A. White and B. Fultz, "Thermodynamic stability and contributions to the Gibbs free energy of nanocrystalline Ni3Fe," *Phys. Rev. Mater* **4**, 086002 (2020).
4. Y. Shen, C.N. Saunders, C.M. Bernal, D.L. Abernathy, M.E. Manley, B. Fultz, "The Anharmonic Origin of the Large Thermal Expansion of NaBr," *Phys. Rev. Lett.* **125**, 085504 (2020). DOI: 10.1103/PhysRevLett.125.085504.
5. Y. Shen, C.N. Saunders, C.M. Bernal, D.L. Abernathy, M.E. Manley, and B. Fultz, "Quantum anharmonicity and intermodulation phonon sidebands in NaBr," *Phys. Rev. B* **103**, 134302 (2021). DOI: 10.1103/PhysRevB.103.134302.

Synergistic Activities

1. U.S. Representative on the International Board for the Applications of the Mössbauer Effect 1999- 2005
2. Neutron Scattering Society of America Member of Executive Committee 2006-2009
3. Brent Fultz and James M. Howe, Transmission Electron Microscopy and Diffractometry of Materials Fourth Edition, (Springer-Verlag, Heidelberg 2013).
4. Brent Fultz, Phase Transitions in Materials Second Edition, (Cambridge University Press, Cambridge 2020).
5. Brent Fultz, et al., *Experimental Inelastic Neutron Scattering with a Chopper Spectrometer*. Open source textbook. 310 pages, Nov. 2020 edition. http://www.its.caltech.edu/~matsci/btfgrp/Inelastic_Neutron_Book.pdf
6. Principal Investigator for the construction of the ARCS Spectrometer at the Spallation Neutron Source in Oak Ridge, TN. 2001-2007.

Recent Awards

William Hume-Rothery Award of TMS, 2016
Fellow of the Neutron Scattering Society of America, 2016
Fellow of the American Physical Society, elected 2017
TMS Fellow Award, Class of 2018
Outstanding Referee of Physical Review 2019

Ph.D. Advisees: 44 completed, 7 presently