

# CURRICULUM VITAE

## BRUCE A. BUNKER

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PERSONAL INFORMATION Born April 20, 1952, Pasadena, CA  
Married (Kathie E. Newman), two children

### EDUCATION

B.Sc., Physics, 1974 University of Washington, Seattle, WA.  
Ph.D., Physics, 1980 University of Washington, Seattle, WA.

### HONORS AND ACTIVITIES

- International Advisory Committee for the XAFS 2018, Kraków, Poland, July 22–27, 2018
- Co-Chair of the *XAFS Tutorial for Crystallographers and Beginners* at the IUCr Congress and General Assembly 2014 Montreal, Quebec, Canada, August 5, 2014
- Chair of the International X-ray Absorption Society (IXAS), 2012-2015
- Invited reviewer and panelist, *Advanced Photon Source Scientific Advisory Committee APS Upgrade Review*, March 7-8, 2011
- Chair of a *National Science Foundation Site Visit Panel for a proposed Science and Technology Center at the Massachusetts Institute of Technology*, October 11-13, 2009.
- Elected *Vice Chair and Chair Elect* of the *International X-ray Absorption Society*, an international group chartered with representing users of these x-ray techniques and sponsoring international conferences and education and outreach programs.
- Member, *National Science Foundation Review Panel for the Cornell High-Energy Synchrotron Source*, October 15-16, 2007.
- Appointed to a two-year term on the *Peer Review Committee*, Canadian Light Source.
- Member, *Scientific Advisory Committee*, Advanced Photon Source, Argonne National Laboratory.

- Chair, Partner User Council of the Advanced Photon Source at Argonne National Laboratory.
- Director, *Materials Research Collaborative Access Team*, Advanced Photon Source, Argonne National Laboratory.
- Member, *Research Directorate*, Advanced Photon Source.
- Member, *Advisory Council* of the Notre Dame *Environmental Molecular Sciences Institute*.
- Member, *Executive Committee* of the *International XAFS Society*, 1993-1999.
- Co-chair, *XAFS X — The 10<sup>th</sup> International X-Ray Absorption Fine Structure Conference*, Chicago, August 10-14, 1998.
- Member, National Synchrotron Light Source Proposal Study Panel (panel for review of synchrotron-radiation beam-time proposals), Spring 1997- Fall, 1999, and Fall 1993 - Fall 1995.
- Member, National Science Foundation Materials Science Proposal Review Panel, May, 1993.
- IBM Postdoctoral Fellow, 1981-1983.

## **EMPLOYMENT**

- Department Chair, Department of Physics, University of Notre Dame. August 1998 - June 2006.
- Professor of Physics, University of Notre Dame. August 1994 - present.
- Associate Professor of Physics, University of Notre Dame. August 1987 - August 1994.
- Assistant Professor of Physics, University of Notre Dame. September 1983 - August 1987.
- IBM Postdoctoral Fellow, University of Illinois at Urbana-Champaign. November 1981- August 1983.
- Postdoctoral Research Associate, Materials Research Participating Research Team at Brookhaven National Laboratory. January-October, 1981.
- Postdoctoral Research Associate, University of Washington, Seattle, Washington. March-December, 1980.

## **TALKS AND PRESENTATIONS**

### **Invited Presentations at Meetings**

*“Perspectives on X-ray Absorption Spectroscopy: The Contributions of Edward Stern and collaborators,”* plenary presentation at **XAFS2018 - 17th International Conference on X-Ray Absorption Fine Structure**, Kraków, Poland, July 22-27, 2018.

*“Introduction to XAFS: History, Theory, and Experimental Overview,”* inaugural lecture at the **APS/IIT Summer XAFS School**, Illinois Institute of Technology and Advanced Photon Source, July 8-12 2018.

*“Introduction to XAFS,”* plenary talk at the **APS/IIT Summer XAFS School**, Illinois Institute of Technology and Argonne National Laboratory, July 7, 2013.

*“Experimental Approaches to XAS, XANES, and Related Techniques,”* **IUCr Congress and General Assembly 2014** Montreal, Quebec, Canada, August 5-12, 2014.

*“Introduction to XAFS,”* plenary talk at the **APS/IIT Summer XAFS School**, Illinois Institute of Technology and Argonne National Laboratory, July 8, 2013.

*“XAFS Studies of Synthetic and Environmental Nanoparticles,”* seminar at the **National Synchrotron Radiation Research Center**, Hsinchu, Taiwan, July 19, 2012.

*“Introduction to XAFS,”* plenary talk at the **APS/IIT Summer XAFS School**, Illinois Institute of Technology and Argonne National Laboratory, July 9, 2012.

*“X-ray Absorption Fine Structure,”* two invited lectures at the **National School on Neutron and X-ray Scattering**, Argonne National Laboratory, June 21, 2011.

*“XAFS Studies of Metal-Bacterial Interactions: From Passive Adsorption to Biomineralization,”* Invited Talk at the **North American Core Shell Spectroscopy Conference**, Denver, CO, August 2-6, 2010.

*“Introduction to XAFS,”* Inaugural lecture at **APS/IIT XAFS Summer School**, Illinois Institute of Technology, July 12-16, 2010.

*“XAFS study of gold adsorption to Bacillus subtilis and Pseudomonas putida bacterial cells,”* at **XAFS 14 – The 14<sup>th</sup> International Conference on X-ray Absorption Fine Structure**, Camerino, Italy, July 26-31, 2009.

*“XAFS study of gold adsorption to Bacillus subtilis bacterial cells,”* at the **Goldschmidt Geochemistry Conference**, Davos, Switzerland, June 21-26, 2009.

*“Introduction and History of X-Ray Absorption Spectroscopy,”* Invited Plenary Talk at the **Workshop on Advanced Topics in EXAFS Analysis and Applications**, 2008 LCLS/SSRL Annual Users’ Meeting, SLAC National Accelerator Laboratory, October 15-18, 2008.

*“XAFS studies of nanosystems: How x-ray, electron microscopy, and optical techniques each contribute to structural characterization,”* at the **Denver X-ray Conference**, Denver, CO, August 6, 2008.

*“X-ray Absorption Fine Structure Spectroscopy and Nanomaterials,”* at the conference workshop **Nanomaterials and Their Applications**, Denver, CO, August 5, 2008.

*“Effect of Siderophores on Pb adsorption to kaolinite – XAFS study,”* at the **Goldschmidt International Geochemistry Conference**, Moscow, ID, May 25, 2005 (Co-authors are B. Mishra, E.A. Haack, and P.A. Maurice).

*“Structure of Core-Shell and Alloyed Binary Nanoparticles Studied with X-ray Absorption Fine Structure,” Annual National Meeting of the American Crystallographic Association, Hyatt Regency Hotel and Conference Center, Chicago, IL, July 19, 2004.*

*“Environmental Science on the Molecular Scale: How can a Physicist help?” Notre Dame Environmental Research Symposium, November 10, 2004.*

*“Probing Interfaces With X-rays: How we use x-ray reflectivity, x-ray diffraction, and reflection-mode XAFS used to study surfaces and internal interfaces,” and “Three Recent XAFS Studies,” International XAFS Workshop, University of Science and Technology, Hefei, China, October 21-22, 2003.*

*“Reflectivity and Reflection-mode XAFS study of the III-V compound native oxide/GaAs Interface,” 11th International Conference on X-ray Absorption Fine Structure (XAFS XI), Aiko, Japan, July 27-31, 2000).*

*“XAFS and Reflectivity Studies of Buried Interfaces,” at the International Symposium on X-ray Absorption Spectroscopy, SRRC, Hsinchu, Taiwan, and Tamkang University, Tamsui, Taiwan, August 9-10, 1997.*

*“New Generation Synchrotron Sources and Condensed Matter Physics,” March Meeting of the American Physical Society, Kansas City, MO, March 17-21, 1997.*

*“XAFS and Reflectivity Studies of Buried Interfaces,” First International Conference on Synchrotron Radiation and Materials Science (ICSRMS), Chicago, July 28-Aug. 1, 1996.*

*“The International XAFS Society Database: The Need and the Realization,” XAFS VIII - The Eighth International X-Ray Absorption Fine Structure Conference, Berlin, Germany, Aug. 29-Sep. 2, 1994.*

*“Glancing Angle XAFS and X-Ray Reflectivity Study of Cu Thermal Vibration Amplitude at the Cu-Al<sub>2</sub>O<sub>3</sub> Interface,” with R. A. Mayanovic, Q. Lu, A. J. Kropf, J. R. Buschert., XAFS VIII - The Eighth International X-Ray Absorption Fine Structure Conference, Berlin, Germany, Aug. 29-Sep. 2, 1994.*

*“X-ray Studies of Off-Center Ions and Ferroelectricity in IV-VI and II-VI Semiconductors,” with Zhihai Wang, and Quazi Islam, International Workshop on Fundamental Experiments in Ferroelectrics, Williamsburg, VA, February 14-16, 1993.*

*“XAFS Studies of Atomic Reordering at ZnTe/CdSe Interfaces,” with M. Kemner, H. Luo, N. Samarth, J. K. Furdyna, M. R. Weidmann, and K. E. Newman, XAFS VII - The Seventh International X-Ray Absorption Fine Structure Conference, Kobe, Japan, August 24-28, 1992.*

*“XAFS Investigations of Ferroelectric Semiconductors,” International Workshop on Fundamental Experiments in Ferroelectrics, February 4-5, 1990, Williamsburg, VA.*

*“XAFS Data Analysis: Techniques, Misconceptions, and Recommendations: Report of the ICSC,”* **XAFS VI: The Sixth International Conference on X-ray Absorption Fine Structure**, August 6-10, 1990; York, England.

*“Proposal for an International XAFS Database,”* **XAFS VI: The Sixth International Conference on X-ray Absorption Fine Structure**, August 6-10, 1990; York, England.

*“EXAFS Studies of Semiconductor Alloys,”* **NATO Advanced Study Institute on Alloy Phase Stability**, Maleme, Crete, Greece, June 23, 1987.

*“The Ferroelectric Transition in IV-VI Semiconductor Alloys,”* **XAFS V: The Fifth International Conference on X-Ray Absorption Spectroscopy**, Seattle, WA, August 22-26, 1988.

*“Current Trends in EXAFS Data Analysis,”* presented at the **Workshop on Computational Methods in X-ray Absorption Fine Structure**, Brookhaven, NY, May 16, 1990.

*“Proposal for Establishment of an International Database,”* presented at the **Second International Workshop on XAS Standards and Criteria**, Brookhaven, NY, May 19-20, 1990.

*“EXAFS Studies of Semiconductor Microstructure,”* **Third International Superlattice Conference**, Chicago, IL, August 17-20, 1987.

*“EXAFS Studies of Metastable Semiconductors,”* **Materials Research Society**, Boston, MA, December 2-6, 1986.

*“X-Ray Absorption Studies of Metal-Semiconductor Interfaces,”* **Workshop on III-V Metal: Semiconductor Interfacial Chemistry and Its Effect on Electrical Properties**, Stanford, CA, November 3-5, 1986.

*“EXAFS Studies of Ternary and Multinary Semiconductor Alloys,”* **The 1986 U.S. Workshop on Mercury Cadmium Telluride**, Dallas, TX, October 7-9, 1986.

## **1985 to Present Talks at Universities and Institutions**

*“Perspectives on X-ray Absorption Spectroscopy”,* *Sayers Lecture, Department of Physics, North Carolina State University, April 6, 2015.*

*“XAFS Studies of Synthetic and Biogenic Nanoparticles,”* *Colloquium, Department of Chemical and Biological Engineering, Drexel University, Philadelphia, PA, October 1, 2010.*

*“Environmental Science on the Molecular Scale: How can a Physicist help?”* *Physics Colloquium, Western Michigan University, Kalamazoo, MI, November 20, 2006.*

“X-ray Studies of Nanoscale Structure and Function,” *Physics Colloquium, University of Washington, Seattle, WA, September 27, 2004.*

“Probing Buried Interfaces With X-rays,” *Condensed Matter Seminar, Indiana University, Bloomington, IN, September 22, 2000.*

“The Use of Synchrotron Radiation in Condensed Matter Studies,” *Interdisciplinary Seminar, University of Florida, January 30, 1995.*

“Exploring the Microstructure of Semiconductor Alloys and Interfaces with X-Ray Absorption Spectroscopy,” *Physics Colloquium, Northwestern University, Evanston, IL, January 29, 1992.*

“EXAFS Studies of Alloys, Interfaces, and Phase Transitions,” *Physics Colloquium, Illinois Institute of Technology, Chicago, IL, August 28, 1991.*

“Probing Semiconductor Alloys and Interfaces With X-Ray Absorption Spectroscopy,” *Physics Colloquium, Marquette University, Milwaukee, WI, November 9, 1990.*

“EXAFS Investigations of Semiconductor Alloys and Ferroelectrics,” *Condensed-Matter Physics Seminar, Michigan State University, East Lansing, MI, October 29, 1990.*

“EXAFS Studies of Semiconductor Alloy Microstructure,” *Condensed-Matter Seminar, Purdue University, West Lafayette, IN, September 8, 1989.*

“X-Ray Absorption Studies of Semiconductors,” *Solid-State Seminar, Institute of Physics, Chinese Academy of Sciences, Beijing, China, May 22, 1987.*

“Recent Applications of X-Ray Spectroscopy,” *Solid-State Seminar, University of Science and Technology of China, Hefei, China, May 26, 1987.*

“EXAFS Studies of Semiconductor Microstructure,” *Colloquium, University of Notre Dame, Notre Dame, IN, September 2, 1987.*

“EXAFS Studies of Semiconductor Microstructure,” *Condensed-matter seminar, Illinois Institute of Technology, Chicago, IL, April 4, 1988.*

“X-Ray Absorption Spectroscopy,” *Colloquium, Goshen College, Goshen, IN, April 6, 1988.*

“The Atomic Scale Structure of II-VI Semiconductor Alloys and Metal-Semiconductor Interfaces,” *Solid State Seminar, North Carolina State University, Raleigh, NC, May 27, 1988.*

“The Atomic-Scale Structure of Semiconductor Alloys: Diluted Magnetic Semiconductors and Ferroelectrics,” *Turner Hall Colloquium, Goshen College, IN, November 15, 1988.*

“X-Ray Absorption and Electron Energy-Loss Spectroscopy,” *series of five lectures on at Tsinghua University, Beijing, China, May 13-20, 1987.*

“EXAFS Studies of Semiconductors,” *Solid-State Seminar, Tsinghua University, Beijing, China, May 21, 1987.*

“Semiconductor Structure as Probed With EXAFS and XANES,” *Solid-State Seminar, Kodak Research Laboratories, Rochester, NY, April, 20 1987.*

“EXAFS Studies of Semiconductor Systems: Recent Results,” *Condensed-Matter Seminar, University of Illinois, October 31, 1986.*

“Non-Randomness in Alloys: Site Correlations in III-V Quaternaries,” *Solid State Seminar, North Carolina State University, October 12, 1985.*

## **REFEREED PUBLICATIONS**

- B. A. Bunker and E. A. Stern, “The iron-sulfur environment in rubredoxin,” *Biophysical Journal* **19**, 334 (1977).
- E. A. Stern, D. E. Sayers, J. G. Dash, H. Schectter, and B. A. Bunker, “Adsorbate and substrate characterization using EXAFS,” *Phys. Rev. Lett.* **38**, 767 (1977).
- E. A. Stern, S. Rinaldi, E. Callen, B. A. Bunker, and S. Heald, “Structure of amorphous RFe<sub>3</sub> compounds using EXAFS,” *Journal of Magnetism and Magnetic Materials* **7**, 188 (1978).
- S. M. Heald, E. A. Stern, B. A. Bunker, E. M. Holt, and S. L. Holt, “Structure of the iron-containing core in ferritin by the extended x-ray absorption fine structure technique,” *J. Amer. Chem. Soc.* **101**, 67 (1979).
- E. A. Stern, S. M. Heald, and B. A. Bunker, “The amplitude of the extended x-ray absorption fine structure in bromine molecules,” *Phys. Rev. Lett.* **42**, 1372 (1979).
- E. A. Stern, B. A. Bunker, and S. M. Heald, “Many-body effects on EXAFS amplitudes,” *Phys. Rev. B* **21**, 5521 (1980).
- P. Georgopolous, D. E. Sayers, B. A. Bunker, W. T. Elam, and W. A. Grote, “Automating an EXAFS facility: hardware and software considerations,” Chapter 11 in *Laboratory EXAFS Facilities - 1980*, ed. by E. A. Stern, *AIP Conference Proceedings* (1980).
- E. A. Stern, B. A. Bunker, and S. M. Heald, “Understanding the causes of non-transferability of EXAFS amplitudes,” in *EXAFS and Synchrotron Radiation in Materials Research*, edited by B. K. Teo and D. C. Joy, Plenum Press (1981).
- E. A. Stern, W. T. Elam, B. A. Bunker, K.-q. Lu, and S. M. Heald, “Ion chambers for fluorescence and laboratory EXAFS detection,” *Nuc. Inst. and Meth.* **195**, 345 (1982).
- B. A. Bunker and E. A. Stern, “The phase factor in extended x-ray absorption fine structure,” *Phys. Rev. B* **27**, 1017 (1983).
- J. P. Stott, S. L. Hulbert, F. C. Brown, B. A. Bunker, T. C. Chiang, and T. Miller, “Core excitons at the K edge of LiF,” *Phys. Rev. B* **30**, 2163 (1984).
- S. L. Hulbert, B. A. Bunker, J. P. Stott, and F. C. Brown, “Copper L<sub>2,3</sub> near-edge in Cu<sub>2</sub>O,” *Phys. Rev. B* **30**, 2120 (1984).
- B. A. Bunker, S. M. Heald, and J. Tranquada, “EXAFS investigations of Fe-implanted Si using a grazing-incidence x-ray beam and fluorescence detection,” *EXAFS and Near-Edge Structure III*, ed. by K. O. Hodgson, B. Hedman, and J. E. Penner-Hahn (Springer-Verlag, 1984), 482-483.
- B. A. Bunker, S. L. Hulbert, and F. C. Brown, “Core excitons at the Si L<sub>2,3</sub> edge in Si<sub>x</sub>Ge<sub>1-x</sub> alloys,” *Proceedings of the 17th International Conference on the Physics of Semiconductors*, San Francisco, CA, 1984, ed. by J. D. Chadi and W. A. Harrison (Springer-Verlag).



- B. A. Bunker, S. L. Hulbert, J. P. Stott, and F. C. Brown, “Shallow-deep core-exciton instability at the Si L<sub>2,3</sub> edge in Si<sub>x</sub>Ge<sub>1-x</sub> alloys,” *Phys. Rev. Lett.* 53, 2157 (1984).
- F. C. Brown, B. A. Bunker, D. M. Ginsberg, T. J. Miller, W. M. Miller, and E. A. Stern, “X-Ray edge studies of Mn<sub>x</sub>Sn<sub>1-x</sub>Mo<sub>6</sub>S<sub>8</sub>,” *Phys. Rev. B* 34, 11 (1986).
- D. E. Sayers and B. A. Bunker, “EXAFS data analysis,” Chapter 6 in *Extended X-Ray Absorption Fine Structure*, edited by R. Prins and D. Koningsberger (Wiley), (1987).
- B. A. Bunker, “EXAFS studies of metastable semiconductors,” pgs. 99-110, in *Interfaces, Superlattices, and Thin Films*, Vol. 77 of the Materials Research Society (1987).
- B. A. Bunker, “EXAFS studies of semiconductor structure,” *J. Vac. Sci. Tech.*, A5, 3003 (1987).
- B. A. Bunker, W.-F. Pong, U. Debska, D. R. Yoder-Short, and J. K. Furdyna, “EXAFS studies of metastable semiconductors,” pgs. 231-235 in *Diluted Magnetic Semiconductors*, Vol. 89 of the Materials Research Society (1987).
- Q. Islam and B. A. Bunker, “The ferroelectric transition in Pb<sub>1-x</sub>Ge<sub>x</sub>Te: Extended x-ray absorption fine-structure investigation of the Ge and Pb sites,” *Phys. Rev. Lett.* 59, 2701 (1987).
- B. A. Bunker, “EXAFS studies of semiconductor microstructure,” *Materials Science Bulletin* 13, 36 (1988).
- K. E. Newman, J. D. Dow, B. A. Bunker, L. L. Abels, P. M. Racciah, S. Ugur, D. Z. Xue, and A. Kobayashi, “Effects of a zincblende-diamond order-disorder transition on the crystal, electronic, and vibrational structures of metastable (GaAs)<sub>1-x</sub>Ge<sub>2x</sub> alloys,” *Phys. Rev. B* 39, 657 (1988).
- W. F. Pong, R. M. Mayanovic, and B. A. Bunker, “Bond lengths in Hg<sub>1-x</sub>Cd<sub>x</sub>Te and II-VI diluted magnetic semiconductors,” *Physica B* 158, 617 (1989).
- B. A. Bunker, Q. T. Islam, and W.-F. Pong, “The ferroelectric transition in IV-VI semiconductor alloys,” *Physica B* 158, 578 (1989).
- P. Bandyopadhyay and B. A. Bunker, “Reflection EXAFS studies of metal-semiconductor interfaces,” *Physica B* 158, 653 (1989).
- S. I. Islam and B. A. Bunker, “Study of the local structure of Ga<sub>x</sub>In<sub>1-x</sub>As<sub>y</sub>Sb<sub>1-y</sub>, a quaternary III-V semiconductor alloy, using the EXAFS technique,” *Physica B* 158, 606 (1989).
- Terrence W. Rettig, Bruce A. Bunker, and Randal C. Ruchti, “How One REU Program Got Its Start,” *Journal of College Science Teaching* XIX 219 (1990).
- W.-F. Pong, R. M. Mayanovic, B. A. Bunker, U. Debska and J. K. Furdyna, “Extended X-ray Absorption Fine-Structure Studies of Z<sub>1-x</sub>Mn<sub>x</sub>Se Alloy Structure,” *Phys. Rev. B* 41, 8440 (1990).
- R. M. Mayanovic, W.-F. Pong, and B. A. Bunker, “EXAFS Studies of Hg<sub>1-x</sub>Cd<sub>x</sub>Te and Hg<sub>1-x</sub>Mn<sub>x</sub>Te Bond lengths: Bond Relaxation and Structural Stability of Ternary Alloys,” *Phys. Rev. B* 42, 11174 (1990).

- B. A. Bunker, Z. Wang, and Q. Islam, "The Local Structure of IV-VI Semiconductor Alloys: Lattice Distortion and Ferroelectric Phase Transitions," in *X-Ray Absorption Fine Structure*, ed. by S. Hasnain (Ellis Horwood, New York, 1989), pgs. 343-345.
- S. I. Islam and B. A. Bunker, "Studies of atomic correlations in quaternary semiconductor alloys using the Extended X-ray Absorption Fine Structure technique," *Physics Letters* 156, 247 (1991).
- B. A. Bunker, Z. Wang, Quazi Islam, "XAFS Investigations of Ferroelectric Semiconductors," *Ferroelectrics* 120, 23 (1991).
- K. M. Kemner, B. A. Bunker, H. Luo, N. Samarth, J. K. Furdyna, M. R. Weidmann, and K. E. Newman, "EXAFS studies of interfaces in ZnTe/CdSe superlattices," *Phys. Rev. B - Rapid Comm.* 46, 7272 (1992).
- Kenneth Kemner, Zhihai Wang, Robert A. Mayanovic, and Bruce A. Bunker, "A low temperature gas-flow total electron yield detector for XAFS measurements," *Nucl Instruments and Methods* B71, 345 (1992).
- Z. Wang, B. A. Bunker, R. A. Mayanovic, U. Debska, J. K. Furdyna, and Q. T. Islam, "EXAFS Studies of the Ferroelectric Phase Transitions Induced By Off-center Ions in  $\text{PbS}_x\text{Te}_{1-x}$  and  $\text{Zn}_x\text{Cd}_{1-x}\text{Te}$  Alloys," invited review paper, *Modern Physics Letters*, Vol 6, 1413 (1992).
- Z. Wang and B. A. Bunker, "X-ray absorption fine-structure studies of  $\text{PbS}_x\text{Te}_{1-x}$  alloys: ferroelectric phase transitions induced by off-center ions," *Phys. Rev. B* 46, 11277 (1992).
- Zhihai Wang, Bruce A. Bunker, Robert A. Mayanovic, Ursula Debska, and Jacek K. Furdyna, "Lattice Distortion and Ferroelectricity in IV-VI and II-VI Semiconductor Alloys," *Jpn. J. of Appl. Phys.* 32-2, 673 (1993).
- K.M. Kemner, B.A. Bunker, H. Luo, N. Samarth, J.K. Furdyna, M.R. Weidmann, K.E. Newman, "EXAFS studies of interfaces in ZnTe/CdSe superlattices," *Jpn. J. of Appl. Phys.* 32-2, 399 (1993).
- A.E. Tabor-Morris, K.M. Kemner, Bruce A. Bunker, K.A. Bertness, "Polarization-dependent XAFS measurements of spontaneous ordering in MOCVD-grown  $\text{Ga}_{0.5}\text{In}_{0.5}\text{P}$  on GaAs substrates," *Jpn. J. of Appl. Phys.* 32-2, 404 (1993).
- W.F. Pong, R.A. Mayanovic, K.T. Wu, P.K. Tseng, B.A. Bunker, A. Hiraya, and M. Watanabe, "X-ray Absorption Near Edge Structure (XANES) Studies of Diluted Magnetic Semiconductors (DMS)  $\text{Zn}_{1-x}\text{Y}_x\text{S}$  (Y=Mn, Fe, Co) Systems," *Jpn. J. of Appl. Phys.* 32-2, 722 (1993).
- K.M. Kemner, B.A. Bunker, H. Luo, N. Samarth, J.K. Furdyna, M.R. Weidmann, and K.E. Newman, "X-ray Absorption Spectroscopy Investigations of Atomic Reordering at ZnTe/CdSe Interfaces," in *Statics and Dynamics of Alloy Phase Transitions*, ed. by P.E.A. Turchi and A. Gonis, (Plenum, New York, 1993), pg. 203-206.
- B.A. Bunker, Z. Wang, Q. Islam, "X-ray Studies of Off-Center Ions and Ferroelectricity in  $\text{PbS}_x\text{Te}_{1-x}$  and  $\text{Zn}_x\text{Cd}_{1-x}\text{Te}$  Alloys," *Ferroelectrics* 150, 171 (1993).

- W. F. Pong, R. A. Mayanovic, K. T. Wu, P. K. Tseng, B. A. Bunker, A. Hiraya, and M. Watanabe, "Influence of transition metal type and content on local order properties of  $Zn_{1-x}Y_xS$  (Y=Mn, Fe, Co) alloys studied using XANES Spectroscopy," *Phys. Rev. B* 50, 7371 (1994).
- K.M. Kemner, B.A. Bunker, H. Luo, N. Samarth, J.K. Furdyna, M.R. Weidmann, K.E. Newman, "Atomic rearrangement at interfaces in ZnTe/CdSe superlattices," *Phys. Rev. B* 50, 4327 (1994).
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- R. A. Mayanovic, Q. Lu, B. A. Bunker, A. J. Kropf, J. R. Buschert, "Glancing Angle XAFS and X-Ray Reflectivity Study of Cu Thermal Vibration Amplitude at the Cu- $Al_2O_3$  Interface," *Physica B* 208, 405 (1995).
- R. A. Mayanovic and B.A. Bunker, "Observation of anisotropic vibrational amplitudes due to thermal motion at a Cu/ $Al_2O_3$  interface," *Physics Letters A* 202 225-229 (1995).
- Q. Lu, B. A. Bunker, H. Luo, A. J. Kropf, K. M. Kemner, J. K. Furdyna, "X-ray Study of Atomic Correlations in ZnCdSeTe Epitaxial Thin Films," *Phys. Rev. B*, 55, 9910 (1997).
- B. A. Bunker, A. J. Kropf, K. M. Kemner, R. A. Mayanovic, and Q. Lu, "XAFS and X-ray Reflectivity Studies of Buried Interfaces," *Nuc. Inst. Meth. Phys. Res. B* 133, 102-108 (1997).
- A. J. Kropf, B. A. Bunker, M. Eisner, S. C. Moss, L. Zecca, A. Stroppolo, and P. R. Crippa, "XAFS Studies of Fe Sites in Synthetic and Natural Neuromelanins," *Biophys J.* 75, 3135-3142 (1998).
- A. J. Kropf, B. A. Bunker, J. K. Furdyna, "XAFS Studies of Interfaces in MnSe/ZnTe Superlattices," *J. Synch. Rad.* 6, 212-214 (1999).
- Z. Zhong, D. Chapman, B.A. Bunker, G. B. Bunker, R. Fischetti, and C. Segre, "A bent Laue analyzer for fluorescence XAFS detection," *J. Synch. Rad.* 6, 370-372 (1999).
- C.U. Segre, N.E. Leyarovska, L.D. Chapman, W.M.Lavender, P.W. Plag, A.S. King, A.J. Kropf, B.A. Bunker, K.M. Kemner, P. Dutta, R.S. Duran and J. Kaduk, "The MRCAT Insertion Device Beamline at the Advanced Photon Source," CP521, *Synchrotron Radiation Instrumentation: Eleventh U.S. National Conference*, ed. P. Pianetta, et al., p419-422, (American Institute of Physics, New York, 2000).
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