

PUBLICATIONS NSLS USERS

Beamline U1A

J. Eng. Jr., B.E. Bent, B. Frühberger, and J.G. Chen, "Studies of the Adsorption Geometry and Decomposition Mechanisms of Benzene on Clean and Carbide-Modified Mo(110) Surfaces using Vibrational Spectroscopy", *J. of Phys. Chem.*, **B101**, 4044, (1997).

D. Fischer, A. Marti and G. Haehner, "Orientation and Order in Microcontact-Printed Self-Assembled Monolayers of Alkane-thiols on Gold Investigated with Near Edge X-Ray Absorption Fine Structure Spectroscopy", *J. Vac. Sci. Technol.*, **A4**, 2173, (1997).

B. Frühberger, J. Eng Jr., and J.G. Chen, "Observation of Anomalous Reactivities of Ni/Pt(111) Bimetallic Surfaces", *Catal. Letts.*, **45**, 85, (1997).

R. Kapoor, S.T. Oyama, B. Frühberger, and J.G. Chen, "NEXAFS Characterization and Reactivity Studies of Bimetallic Vanadium Molybdenum Oxynitride Hydrotreating Catalysts", *J. of Phys. Chem.*, **B101**, 1543, (1997).

C.C. Yu, S. Ramanathan, B. Dhandapani, J.G. Chen, and S.T. Oyama, "Bimetallic Nb-Mo Hydroprocessing Catalysts: Synthesis, Characterization and Activity Studies", *J. of Phys. Chem.*, **B101**, 512, (1997).

Beamline U2A

A.F. Goncharov, R.J. Hemley, H.K. Mao, and R. Lu, "Synchrotron Infrared Spectroscopy of Orientationally Ordered Phase of Hydrogen", *Bull. Am. Phys. Soc.*, **42**, 91, (1997).

H. Kagi, T. Inoue, D.J. Weidner, R. Lu, and G.R. Rossman, "Speciation of Hydroxides in Hydrous Ringwoodite", *EOS Trans. Am. Geophys. Union*, **78**, S312, (1997).

V.V. Struzhkin, A.F. Goncharov, R.J. Hemley, and H.K. Mao, "Cascading Fermi Resonances and the Soft Mode in Dense Ice", *Phys. Rev. Lett.*, **78**, 4446, (1997).

Beamline U2B

L.M. Miller, G.L. Carr, G.P. Williams, and M.R. Chance, "Synchrotron Infrared Microspectroscopy as a Means of Studying Chemical Composition at a Cellular Level", *Biophysical J.*, **72**, A214, (1997).

A. Xie, Q. He, E.M. Scheuring, B. Sclavi, and M.R. Chance, "Far-Infrared Spectroscopy of Coherent Modes in Proteins", *Prog. In Bioph. & Molecular Biology*, **65**, 42, (1996).

Beamline U3A

B. Harris, A.J. Burek, J.J. Fitch, D.E. Graessle, D.A. Schwartz, R.L. Blake, and E.M. Gullikson, "Determination of Optical Constants for AXAF Mirrors from 0.05-1.0 keV Through Reflectance Measurements", in Grazing Incidence and Multilayer X-ray Optical System, *SPIE*, **3113**, 40, (1997).

Beamline U3C

U. Diebold and N.D. Shinn, "Adsorption and Thermal Stability of Mn/TiO₂(110): 2p X-ray Absorption Spectroscopy and Soft X-ray Photoemission", *Surf. Sci.*, **343**, 53, (1995).

Beamline U4A

K. Breuer, K.E. Smith, M. Greenblatt, W. McCarroll, and S.L. Hulbert, "Dominant Role of the Surface in Photoemission from Quasi-One Dimensional Conductors: K_{0.3}MoO₃", *J. Phys. Chem. Solids*, **57**, 1803, (1996).

A. Déchelette-Barbara, J.M. Tonnerre, M.C. Saint-Lager, F. Bartolomé, J.F. Bérar, D. Raoux, H.M. Fischer, M. Piecuch, V. Chakarian, C.C. Kao, M. Gailhannou, S. Lefèvre and M. Bessière
"X-ray Anomalous Diffraction and Resonant Magnetic Scattering X-ray Study of Fe_xMn_{1-x}/Ir(001) Multilayers", *J. Magn. Magn. Mater.*, **165**, 87, (1997).

H.-S. Tao, U. Diebold, N.D. Shinn, and T.E. Madey, "Decomposition of P(CH₃)₃ on Ru(0001): Comparison with PH₃ and PCl₃", *Surf. Sci.*, **375**, 257, (1997).

Beamline U4B

V. Chakarian, Y.U. Idzerda, C.T. Chen, G. Meigs, and C.-C. Kao, "Studies of Magnetic Materials with Circularly Polarized Soft X-rays", Applications of Synchrotron Radiation in Industrial, Chemical, and Materials Science, Plenum Press, New York, p. 187, (1996).

V. Chakarian, Y.U. Idzerda, C.-C. Kao, and C.T. Chen, "Circularly Polarized Soft X-ray Resonant Magnetic Scattering Studies of FeCo/Mn/FeCo Multilayers", *J. Magn. Magn. Mater.*, **165**, 52, (1997).

V. Chakarian, Y. U. Idzerda, K. M. Kemner, J. -H. Park, G. Meigs, and C.T. Chen, "Giant Magnetic Effects in the L-edge EXAFS of 3d Transition Metals", *J. Appl. Phys.*, **79**, 6493, (1996).

V. Chakarian, Y. U. Idzerda, H.-J. Lin, C. J. Gutierrez, G. A. Prinz, G. Meigs, and C. T. Chen, "Element-Specific Vector Magnetometry of Buried Layers", *J. Magn. Magn. Mater.*, **156**, 265, (1996).

J. W. Freeland, V. Chakarian, Y.U. Idzerda, S. Doherty, J. G. Zhu, J.-H. Park, and C.-C. Kao, "Identification Layer Switching in Magnetic Multilayers with X-ray Resonant Magnetic Scattering", *Appl. Phys. Lett.*, **71/2**, 276, (1997).

M.M. Grush, J. Chen, T.L. Stemmler, S.J. George, C.Ralston, R.T. Stibrany, A. Gelasco, G. Christou, S.M. Gorun, J.E. Penner-Hahn, and S.P. Cramer, "Manganese L-edge X-ray Absorption Spectroscopy of Manganese Catalase from *L. plantarum* and Mixed Valence Manganese Complexes", *J. Am. Chem. Soc.*, **118**, 65, (1996).

Y.U. Idzerda, V. Chakarian, and J.W. Freeland, "Soft X-ray Magnetic Circular Dichroism at NSLS Beamline U4B", *Syn. Rad. News*, **10**, 6, (1997).

- K.M. Kemner, V. Chakrarian, Y.U. Idzerda, and W.T. Elam, "Deconvolution of 3d Transition Metal L-edge EXAFS and Magnetic EXAFS", *Rev. Sci. Instrum.*, **67**, 3365, (1996).
- M. Merz, N. Nucker, E. Pellegrin, S. Schuppler, M. Keilwein, M. Knupfer, M.S. Golden, J. Fink, C.T. Chen, V. Chakrarian, Y.U. Idzerda, and A. Erb, "X-ray Absorption Spectroscopy of Detwinned $\text{Pr}_x\text{Y}_{1-x}\text{Ba}_2\text{Cu}_3\text{O}_{7-y}$ Single Crystals", *J. of Low Temp. Phys.*, **105**, 347, (1996).
- M. Merz, N. Nucker, E. Pellegrin, P. Schweiss, S. Schuppler, M. Keilwein, M. Knupfer, M.S. Golden, J. Fink, C.T. Chen, V. Chakrarian, Y.U. Idzerda, and A. Erb, "X-ray Absorption Spectroscopy of Detwinned $\text{Pr}_x\text{Y}_{1-x}\text{Ba}_2\text{Cu}_3\text{O}_{7-y}$ Single Crystals: Electronic Structure and Hole Distribution", *Phys. Rev.*, **B55**, 9160, (1997).
- J.-H. Park, S.-W. Cheong, and C.T. Chen, "Double-Exchange Ferromagnetism in $\text{La}(\text{Mn}_{1-x}\text{Co}_x)\text{O}_3$ ", *Phys. Rev.*, **B55**, 11072, (1997).
- J.-H. Park, L. H. Tjeng, J. W. Allen, P. Metcalf, and C. T. Chen, "Single-Particle Gap above the Verwey Transition in Fe_3O_4 ", *Phys. Rev.*, **B55**, 12813, (1997).
- J.-H. Park, C. T. Chen, S.-W. Cheong, W. Bao, G. Meigs, V. Chakrarian, and Y. U. Idzerda, "Electron Spectroscopic Studies of Colossal Magnetoresistance Material $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$ ", *J. Appl. Phys.*, **79**, 4558, (1996).
- J.-H. Park, C. T. Chen, S.-W. Cheong, W. Bao, G. Meigs, V. Chakrarian, and Y. U. Idzerda, "The Electronic Structure and Metal-Insulator Transition of Perovskite Manganese Oxide Giant Magnetoresistance System", *J. Appl. Phys.*, **79**, 4558, (1997).
- ## Beamline U4IR
- P. Dumas, M. Suhren, Y.J. Chabal, C.J. Hirschmugl, and G.P. Williams, "Adsorption and Reactivity of NO on Cu(111): A Synchrotron Infrared Reflection Absorption Spectroscopic Study", *Surf. Sci.*, **371**, 200, (1997).
- J. Eng, Jr., K. Raghavachari, L.M. Struck, Y.J. Chabal, B.E. Bent, G.W. Flynn, S.B. Christman, E.E. Chaban, G.P. Williams, K. Radermacher, and S.Mantl, "A Vibrational Study of Ethanol Adsorption on Si(100)", *J. Chem. Phys.*, **106**, 9889, (1997).
- R. Henn, J. Kircher, and M. Cardona, "C-Polarized Vibrational Modes in La_2CuO_4 and $\text{La}_{1.87}\text{Sr}_{0.13}\text{CuO}_4$ Determined by Ellipsometry", *Physica*, **C269**, 99, (1996).
- R. Henn, J. Kircher, M. Cardona, A. Wittlin, V.H.M. Duijn, and A.A. Menovsky, "Far-infrared C-axis Response of $\text{La}_{1.87}\text{Sr}_{0.13}\text{CuO}_4$ Determined by Ellipsometry", *Phys. Rev.*, **B53**, 9353, (1996).
- R. Henn, A. Wittlin, M. Cardona and S. Uchida, "Dynamics of the C-Polarized Infrared Active Modes in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_{4a}$ ", *Phys. Rev.*, **B56**, 6295, (1997).
- J. Hrbek, S.Y. Li, J.A. Rodriguez, D.G. van Campen, H.H. Huang, and G.-Q. Xu, "Synthesis of Sulfur Films from S_2 Gas: Spectroscopic Evidence for the Formation of S_n Species", *Chem. Phys. Letts.*, **267**, 65, (1997).
- J. Kircher, R. Henn, M. Cardona, P.L. Richards and G.P. Williams, "Far Infrared Ellipsometry using Synchrotron Radiation", *J. Opt. Soc. Am.*, **B14**, 705, (1997).
- L.M. Miller, G.L.Carr, G.P. Williams, and M.R. Chance, "Synchrotron Infrared Microspectroscopy as a Means of Studying Chemical Composition at a Cellular Level", *Biophysical J.*, **72**, A214, (1997).

T. Nanba, and G.P. Williams, "Phase Transitions of CdS Microcrystals Under High Pressure", *J. Phys. Soc. Japan*, **66**, 1526, (1997).

K. Raghavachari, Y.J. Chabal, and L.M. Struck, "Vibrational Interactions at Surfaces: H₂O on Si(100)", *Chem. Phys. Letts.*, **252**, 230, (1996).

A.E. Russell, L. Rubasingham, T.H. Ballinger, and P.L. Hagans, "Thin Layer Effects in *in situ* Far-Infrared Spectroscopy", *J. Electroanalytical Chem.*, **422**, 197, (1997).

L.M. Struck, J. Eng, Jr., B.E. Bent, G.W. Flynn, Y.J. Chabal, S.B. Christman, E.E. Chaban, K. Raghavachari, A.E. White, G.P. Williams, K. Radermacher, and S. Mantl, "Vibrational Study of Silicon Oxidation: H₂O on Si(100)", *Surf. Sci.*, **380**, 444, (1997).

D.L. Wetzel, J.A. Reffner, and G.P. Williams, "Synchrotron Powered FT-IR Microspectroscopy- Single-cell Interrogations", *Mikrochimica Acta*, **S14**, 353, (1997).

G.P. Williams, "IR Spectroscopy at Surfaces with Synchrotron Radiation", *Surf. Sci.*, **368**, 1, (1996).

Beamline U5UA

P.A. Dowben, D.N. McIlroy, and D. Li, "Surface Magnetism of the Lanthanides", Handbook on the Physics and Chemistry of Rare Earths, Edited by K.A. Gschneidner and L. Eyring, North Holland Press, **24**, 159, (1997).

D. Li, J. Pearson, S.D. Bader, D.N. McIlroy, C. Waldfried, and P.A. Dowben, "Spin Polarization of the Conduction Bands and Secondary Electrons of Gd(0001)", *J. Appl. Phys.*, **79**, 5838, (1996).

D.N. McIlroy, C. Waldfried, D. Li, J. Pearson, S.D. Bader, D.-J. Huang, P.D. Johnson, R.F. Sabiryanov, S.S. Jaswal, and P.A. Dowben, "Oxygen Induced Suppression of the Surface Magnetization of Gd(0001)", *Phys. Rev. Lett.*, **76**, 2802, (1996).

C. Waldfried, D.N. McIlroy, D. Li, J. Pearson, S.D. Bader, and P.A. Dowben, "Dissociative Nitrogen Chemisorption and Bonding on Gd(00001)", *Surf. Sci. Letts.*, **341**, L1072, (1995).

Beamline U7B

B. Zhao, Photoemission Studies of FeRh, M.S. Degree in Physic, Florida Atlantic University, (1997).

Beamline U8B

F.R. McFeely, K.Z. Zhang, and M.M. Banaszak Holl, "Chloroethane Physisorbed on Hydrogenated Si(111): A Test System for the Evaluation of Core Level XPS Assignment rules at Si/SiO₂ Interfaces", *Mat. Res. Soc. Symp.*, **446**, 15, (1997).

K.Z. Zhang, M.M. Banaszak Holl, J.E. Bender, IV., S. Lee, and F.R. McFeely, "Si 2p Core Level Shifts at the Si(100)/SiO₂ Interface: an Experimental Study", *Phys. Rev.*, **B54**, 7686, (1996).

K.Z. Zhang, M.M. Banaszak Holl, and F.R. McFeely, "Soft X-ray Si 2p Core-level Spectra of H₈Si₈O₁₂ Physisorbed on Si(111)-H: Additional Experimental Evidence Regarding the Binding Energy Shift of the HSiO₃ Fragment", *Mat. Res. Soc. Symp.*, **446**, 241, (1997).

K.Z. Zhang, J.N. Greeley, M.M. Banaszak Holl, and F.R. McFeely, "The Role of Extra-Atomic Relaxation in Determining Si 2p Binding Energy Shifts at Silicon/Silicon Oxide Interfaces", *J. of Appl. Phys.*, **82**, 2298, (1997).

K.Z. Zhang, L.M. Meeuwenberg, M.M. Banaszak Holl, and F.R. McFeely, "A New Model Silicon/Silicon Oxide Interface Synthesized from $H_{10}Si_{10}O_{15}$ and Si(100)-2x1", *Japan J. of Appl. Phys.*, **36**, 1622, (1997).

Beamline U9B

L.A. Kelly, J.G. Trunk, and J.C. Sutherland, "Simultaneous Recording of the Spectral, Temporal and Polarization Properties of Emission Spectra", *Society for Photo-Optical Instrumentation Engineers*, **2980**, 2, (1997).

L.A. Kelly, J.G. Trunk, and J.C. Sutherland, "Time Resolved Fluorescence Polarization Measurements for Entire Emission Spectra with a Resistive-Anode, Single-Photon-Counting Detector: The Fluorescence Omnilyzer", *Rev. of Sci. Instrum.*, **68**, 2279, (1997).

E.S. Stevens, "Carbohydrates", *Circular Dichroism: Conformational Analysis of Biomolecules*, edited by G.D. Fasman, Plenum Press, pp. 501-530, (1996).

D. Wisniewski, W. Drozdowski, A.J. Wojtowicz, A. Lempicki, P. Dorenbos, J.T.M. De Haas, C.W.E. Van Eijk, and A.J.J. Bos, "Spectroscopy and Thermoluminescence of $LuAlO_3:Ce$ ", *Acta Physica Polonica*, **A90**, 377, (1996).

A.J. Wojtowicz, "New High Performance Scintillators Based on Re-Activated Insulator Materials", *Acta Physica Polonica*, **A90**, 215, (1996).

A.J. Wojtowicz, A. Lempicki, D. Wisniewski, M. Balcerzyk, and C. Brecher, "The Carrier Capture and Recombination Processes in Ln^{3+} - Activated Scintillators", *IEEE Trans. in Nucl. Sci.*, **43**, 2168, (1996).

Beamline U11

S.-C. Kuo, Z. Zhang, S.K. Ross, R.B. Klemm, R.D. Johnson, III, P.S. Monks, P.T. Thorn, Jr., and L.J. Stief, "A Discharge Flow-Photoionization Mass Spectrometric Study of HNO: Photoionization Efficiency Spectrum and Ionization Energy; and Proton Affinity of NO", *J. Phys. Chem.*, **101**, 4035, (1997).

R.P. Thorn, Jr., L.J. Stief, S.C. Kuo, and R.B. Klemm, "The Ionization Energy of Cl_2O and ClO , Appearance Energy of ClO^+ (Cl_2O) and Heat of Formation of Cl_2O ", *J. Phys. Chem.*, **100**, 14178, (1996).

Beamline U13UA

S. Conrad, D.R. Mullins, Q.-S. Xin, and X.-Y. Zhu, "Thermal and Photochemical Deposition of Sulfur on GaAs(100)", *Appl. Surf. Sci.*, **107**, 145, (1996).

D.R. Huntley, D.R. Mullins, and M.P. Wingeier, "Desulfurization of Thiophenic Compounds by Ni(111): Adsorption and Reactions of Thiophene, 3-Methyl Thiophene and 2,5-Dimethyl Thiophene", *J. Phys. Chem.*, **100**, 19620, (1996).

D.R. Mullins, "Enhancement of Methane Formation from Methanethiol Adsorbed on a Strained Ni Film on W(001)", *J. Phys. Chem.*, **101**, 1014, (1997).

D.R. Mullins, D.R. Huntley, T. Tang, D.K. Saldin, and W.T. Tysoe, "The Adsorption Site and Orientation of CH_3S on Ni(111)", *Surf. Sci.*, **380**, 468, (1997).

D.R. Mullins, and P.F. Lyman, "The Interaction of Methanethiol with Sulfur Covered W(001)", *Langmuir*, **12**, 6382, (1996).

D.R. Mullins, T. Tang, X. Chen, V. Shneerson, D.K. Saldin, and W.T. Tysoe, "The Adsorption Site and Orientation of CH_3S and Sulfur on Ni(001) using Angle-Resolved X-ray Photoelectron Spectroscopy", *Surf. Sci.*, **372**, 193, (1997).

S.H. Overbury, and D.R. Mullins, "Geometric and Electronic Structure of Sulfided Ni Films on W(001) Studied by Low Energy Alkali Ion Scattering and Soft X-ray Photoemission", *Surf. Sci.*, **369**, 231, (1996).

Beamline U13UB

A.A. MacDowell, Z. Shen, K. Fujii, J.E. Bjorkholm, R.R. Freeman, L. Fetter, D.W. Taylor, D.M. Tennant, L. Eichner, W.K. Waskiewicz, D.L. White, D.L. Windt, and O.R. Wood, II, "Extreme Ultraviolet 1:1 Ring-Field Lithography Machine", OSA Trends in Optics and Photonics Vol. 4 Extreme Ultraviolet Lithography, edited by G.D. Kubiak and D.R. Kania, Optical Society of America, pp. 192-198, (1996).

K.B. Nguyen, A.A. MacDowell, K. Fujii, D.M. Tennant, and L.A. Fetter, "At-Wavelength Inspection of EUVL Mask Defects with an Offner 1X Offner Ring-Field System", OSA Trends in Optics and Photonics Vol. 4 Extreme Ultraviolet Lithography, edited by G.D. Kubiak and D.R. Kania, Optical Society of America, pp. 49-53, (1996).

D.A. Tichenor, A.K. Ray-Chaudhuri, G.D. Kubiak, K.B. Nguyen, S.J. Haney, K.W. Berger, R.P. Nissen, Y.E. Perras, P.S. Jin, L.I. Weingarten, P.N. Keifer, R.H. Stulen, R.N. Shagam, W.C. Sweatt, T.G. Smith, O.R. Wood, II, A.A. MacDowell, J.E. Bjorkholm, T.E. Jewell, F. Zernike, B.L. Fix, and H.W. Hauschildt, "Progress in the Development of EUV Imaging Systems", OSA Trends in Optics and Photonics Vol. 4, Extreme Ultraviolet Lithography, edited by G.D. Kubiak and D.R. Kania, Optical Society of America, pp. 2-8, (1996).

Beamline U14A

R.A. Bartynski, E. Jensen, S.L. Hulbert, and C.-C. Kao, "Auger Photoelectron Coincidence Spectroscopy using Synchrotron Radiation", *Prog. in Surf. Sci.*, **53**, 155, (1996). BNL 64645.

A.K. See, R.A. Bartynski, A. Nangia, A.H. Weiss, S.L. Hulbert, X. Wu, and C.-C. Kao, "Enhanced Core Level Photoemission from Oxide Surface Defects Using Auger-Photoelectron Coincidence Spectroscopy", *Surf. Sci. Lett.*, **383**, L735, (1997).

Beamline X1A

H. Ade, "Compositional and Orientational Characterization of Polymeric Systems with X-ray Microscopy", *Trends in Polymer Science*, **5/2**, 58-66, (1997).

H. Ade, B. Hsiao, G. Mitchell, E. Rightor, A. P. Smith, and R. Cieslinski, "Chemical and Orientational Imaging of Polymeric Samples", edited by G.W. Bailey and A.J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco, San Francisco Press, pp. 68-69, (1994).

J. M. Boese, X-ray Absorption Near edge Structure of Amino Acids and Peptides, M.A. Thesis, Department of Physics, State University of New York at Stony Brook, (1996).

C.J. Buckley, "The Measuring and Mapping of Calcium in Mineralised Tissues by Absorption Difference Imaging", *Rev. Sci. Instrum.*, **66/2**, 1318-1321, (1995).

C.J. Buckley, "Imaging of Calcium Deposits in Cartilage by Scanning X-ray Microscopy", *Bone*, **13**, 100, (1992).

C.J. Buckley, S.Y. Ali, C. A. Scotchford, M. Rivers, K. L. D'Amico, J. H. Dunsmuir, and S. R. Ferguson, "Imaging of Calcium Deposits in Human Cartilage", *Scanning*, **14**, 27-28, (1992).

C.J. Buckley, S. J. Bellamy, N. Khaleque, S. Downes, and X. Zhang, "Possibilities for Chemical State Imaging of Calcium Compounds", edited by V. V. Aristov and A. I. Erko, X-ray Microscopy IV, Bogorodskii Pechatnik. Proceedings of the 4th International Conference, Chernogolovka, Russia, pp. 207-212, (1994).

C.J. Buckley, R.E. Burge, G.F. Foster, S.Y. Ali, and C.A. Scotchford, "X-ray Probe Mapping of Calcium Deposits in Articular Cartilage", edited by P. B. Kenway, P. J. Duke, G. W. Lorimer, T. Mulvey, I. W. Drummond, G. Love, A. G. Michette, and M. Stedman, X-Ray Optics and Microanalysis, Bristol, IOP Publishing, pp. 621-626, (1992).

C.J. Buckley, S. Downes, N. Khaleque, S. J. Bellamy, and X. Zhang, "Mapping the Density and Mineral Phase of Calcium in Bone at the Interface with Biomaterials using Scanning X-ray Microscopy", edited by G.W. Bailey and A.J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco, San Francisco Press, pp. 44-45, (1994).

H. N. Chapman, "Phase-Retrieval X-ray Microscopy by Wigner-Distribution Deconvolution", *Ultramicroscopy*, **66**, 153-172, (1996).

H. N. Chapman, K. A. Nugent, S. W. Wilkins and A. V. Rode, "Capillary X-ray Optics", edited by C. Jacobsen and J. Trebes, Soft X-ray Microscopy, SPIE 1741, 40-50, (1992).

H. Chapman, S. Williams, and C. Jacobsen, "Imaging of 30 nm gold Spheres by Dark-field Scanning Transmission X-ray Microscopy", edited by G. W. Bailey and A. J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco Press, pp. 52-53, (1994).

G. D. Cody, R. E. Botto, H. Ade, and S. Wirick, "The Application of Soft X-ray Microscopy to the *in situ* Analysis of Sporinite in Coal", *Intern. J. of Coal Geo.*, **32**, 69-86, (1996).

J. R. Gilbert, Soft X-ray Microimaging of Whole Wet Cells, PhD Thesis, California Institute of Technology, Pasadena, California, (1992).

K. K. Goncz, A Comprehensive Study of the Physical Properties of Isolated Zymogen Granules using Scanning Transmission X-ray Microscopy, PhD Thesis, Department of Biophysics, University of California, (1994).

K. K. Goncz, R. Behrsing, and S. S. Rothman, "The Morphology and Structure of Zymogen Granules", *Cell and Tissue Res.*, **280**, 519-530, (1995).

K. K. Goncz, R. Behrsing, and S. S. Rothman, "A Study of the Properties of Zymogen Granules using X-ray Microscopy", edited by V.V. Aristov and A. I. Erko, X-ray Microscopy IV, Bogorodskii Pechatnik, Proceedings of the 4th International Conference, Chernogolovka, Russia, September 20-24, pp. 256-264, (1994).

K. K. Goncz, M. Moronne, W. Lin, and S. Rothman, "Measuring Changes in the Mass of Single Subcellular Organelles using X-ray Microscopy", edited by C. Jacobsen and J. Trebes, Soft X-ray Microscopy, SPIE, 1741, 342-350, (1992).

K. K. Goncz and S. S. Rothman, "Membrane Protein Transport in Eukaryotic Secretion in Cells", *Membrane Protein Transport*, **3**, 279-293, (1996).

W. S. Haddad, I. McNulty, J. E. Trebes, E. H. Anderson, L. Yang, and J. M. Brase, "Demonstration of Ultra-High-Resolution Soft X-ray Tomography using a Scanning Transmission X-ray Microscope", edited by G.W. Bailey and A.J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco Press, pp. 312-313, (1994).

M. R. Howells, C. J. Jacobsen, and S. Lindaas, "X-ray Holographic Microscopy using the Atomic-Force Microscope", edited by V.V. Aristov and A.I. Erko, X-ray Microscopy IV, Chernogolovka, Russia, Bogorodskii Pechatnik. Proceedings of the 4th International Conference, September 20-24, pp. 413-427, (1994).

A. Irtel von Brenndorff, M. M. Moronne, C. Larabell, P. Selvin, and W. Meyer-Ilse, "Soft X-ray Stimulated High Resolution Luminescence Microscopy", edited by V.V. Aristov and A.I. Erko, X-ray Microscopy IV, Bogorodskii Pechatnik. Proceedings of the 4th International Conference, Chernogolovka, Russia, September 20-24, pp. 337-343, (1994).

C. Jacobsen, "Soft-X-ray Microscopy: Imaging of Biological Systems", edited by E. Burattini and A. Balerna, Biomedical Applications of Synchrotron Radiation, Volume CXXVIII Corso, Amsterdam, IOS Press, pp. 91-109, (1996).

C. Jacobsen, H. N. Chapman, J. Fu, A. Kalinovsky, J. Kirz, J. Maser, A. Osanna, S. Spector, D. Tennant, S. Wang, S. Wirick, and X. Zhang, "Biological Microscopy and Soft X-ray Optics at Stony Brook", *J. of Elect. Spect. and Related Pheno.*, **80**, 337-341, (1996).

C. Jacobsen, E. Anderson, H. Chapman, J. Kirz, S. Lindaas, M. Rivers, S. Wang, S. Williams, S. Wirick, and X. Zhang, "The X-1A Scanning Transmission X-ray Microscope: Optics and Instrumentation", edited by V. V. Aristov and A. I. Erko, X-ray Microscopy IV, Bogorodskii Pechatnik. Proceedings of the International Conference, Chernogolovka, Russia, September 20-24, pp. 304-321, (1993).

C. Jacobsen, J. Fu, Y. Wang, and S. Williams, "Scanning Luminescence X-ray Microscopy: Progress Towards Selective Staining using Microspheres", edited by G. W. Bailey and A. J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco Press, pp. 74-75, (1994).

J. Kirz, H. Ade, R. E. Botto, G. D. Cody, J. Fu, C. Jacobsen, S. Lindaas, W. F. Mangel, W. J. McGrath, V. Oehler, J. van't Hof, S. Williams, S. Wirick, and X. Zhang, "Scanning Transmission X-ray Microscopy at the NSLS", edited by V. V. Aristov and A. I. Erko, X-ray Microscopy IV, Bogorodskii Pechatnik. Proceedings of the International Conference, Chernogolovka, Russia, September 20-24, pp. 41-61, (1993).

J. Kirz, H. Ade, C. Jacobsen, C. H. Ko, S. Lindaas, S. Williams, and X. Zhang, "Soft X-ray Microscopy-Physical Basis and Recent Developments", Proceedings of the Fifth Asia-Pacific Physics Conference, *World Scientific*, 1, pp. 200-215, (1994).

J. Kirz, C. Jacobsen, S. Lindaas, S. Williams, X. Zhang, E. Anderson, and M. Howells, "Soft X-ray Microscopy at the National Synchrotron Light Source", edited by B. Chance, D. Deisenhofer, S. Ebashi, D. T. Goodhead, J. R. Helliwell, H. E. Huxley, T. Iizuka, J. Kirz, T. Mitsui, E. Rubenstein, N. Sakabe, T. Sasaki, G. Schmahl, H. Sturhmann, K. Wüthrich, and G. Zaccai, Synchrotron Radiation in Biosciences, Clarendon Press, Oxford, pp. 563-571, (1994).

C.-H. Ko, Development of a Second Generation Scanning Photoemission Microscope at the National Synchrotron Light Source, PhD Thesis, Department of Physics, State University of New York at Stony Brook, (1995).

S. A. Lindaas, X-ray Gabor Holography using a Scanning Force Microscope, PhD Thesis, Department of Physics, State University of New York at Stony Brook, (1994).

S. Lindaas, C. Jacobsen, A. Kalinovsky, and M. Howells, "X-ray Gabor Holography: Recent Progress", edited by G. W. Bailey and A. J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco, San Francisco Press, pp. 72-73, (1994).

S. Lindaas, M. Howells, C. Jacobsen, and A. Kalinovsky, "X-ray Holographic Microscopy by means of Photoresist Recording and Atomic-Force Microscope Readout", *J. of Opt. Soc. of Am.*, **A13/9**, 1788-1800, (1996).

B. W. Loo, Jr., S. Williams, W. T. Lin, W. H. Love, S. Meizel and S. S. Rothman, "High Resolution X-ray Stereomicroscopy: True Three-Dimensional Imaging of Biological Samples", edited by C. Jacobsen and J. Trebes, Soft X-ray Microscopy, *SPIE*, **1741**, 392, (1992).

K. Maier, Characterization of a Scanning Photoemission Microscope, M.A. Thesis, Department of Physics, State University of New York at Stony Brook, (1995).

I. McNulty, J. Kirz, C. Jacobsen, M. R. Howells and E. Anderson, "First Results with a Fourier Transform Holographic Microscope", edited by A.G. Michette, G.R. Morrison, and C. J. Buckley, X-ray Microscopy III, Springer Series in Optical Sciences, Berlin, Springer-Verlag., **67**, pp. 251-254, (1992).

M.M. Moronne, C. Larabell, P.R. Selvin, and A. Irtel von Brenndorff, "Development of Fluorescent Probes for X-ray Microscopy", edited by G.W. Bailey and A.J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco Press, pages 48-49, (1994).

G. R. Morrison, "X-ray Imaging with a Configured Detector", edited by V. V. Aristov and A. I. Erko, X-ray Microscopy IV, Bogorodskii Pechatnik, Proceedings of the 4th International Conference, Chernogolovka, Russia, September 20-24, pp. 478-486, (1994).

A. Osanna, C. Jacobsen, A. Kalinovsky, J. Kirz, J. Maser, and S. Wang, "X-ray Microscopy: Preparations for Studies of Frozen Hydrated Specimens", Scanning Microscopy, **10**, 349-358, (1996).

E. G. Rightor, A. P. Hitchcock, H. Ade, R. D. Leapman, S. G. Urquhart, A. P. Smith, G. Mitchell, D. Fischer, H. J. Shin, and T. Warwick. "Spectromicroscopy of Poly(ethylene terephthalate): Comparison of Spectra and Radiation Damage Rates in X-ray Absorption and Electron Energy Loss", *J. of Phys. Chem.*, **B101/11**, 1950-1960, (1997).

A. P. Smith, Characterization of the Lateral Orientation within Poly(p-phenylene terephthalamide) (Kevlar) Fibers and the Microchemistry of Methylene Diphenyl Diisocyanate (MDI) based Polyurethane foams with X-ray Microscopy, M.S. Thesis, Materials Science and Engineering, North Carolina State University, (1995).

A. P. Smith and H. Ade, "Quantitative Orientational Analysis of a Polymeric Material (Kevlar fibers) with X-ray Microspectroscopy", *Appl. Phys. Letts.*, **69**, 3833-3835, (1996).

A. P. Smith, J. H. Laurer, H. W. Ade, S. D. Smith, A. Ashraf, and R. J. Spontak, "X-ray Microscopy and NEXAFS Spectroscopy of Macrophase-Separated Random Block Copolymer/Homopolymer Blends", *Macromolecules*, **30**, 663-666, (1997).

S. J. Spector, Diffractive Optics for Soft X-rays, PhD Thesis, Department of Physics, State University of New York at Stony Brook, (1997).

Y. Wang and C. Jacobsen, "Modelling of Dissolution and Resolution in Contact X-ray Microscopy", edited by G.W. Bailey and A.J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco, San Francisco Press, pp. 62-63, (1994).

M. Wei, D.T. Attwood, T.K. Gustafson, and E.H. Anderson, "Patterning a 50-nm Period Grating using Soft X-ray Spatial Frequency Multiplication", *J. Vac. Sci. and Tech.*, **12/6**, 3648-3652, (1994).

S. Williams, C. Jacobsen, J. Kirz, S. S. Lamm, J. van't Hof, and X. Zhang, "Metaphase Chromosome DNA Mass Fraction is Independent of Species", edited by G.W. Bailey and A.J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco, San Francisco Press, pp. 46-47, (1994).

S. Williams, C. Jacobsen, J. Kirz and X. Zhang, "Imaging with the Brookhaven Scanning Transmission X-ray Microscope", edited by J.M. Schnur and M. Peckerar, Synthetic Microstructures in Biological Research, Plenum Press, pp. 109-119, (1992).

B. Winn, H. Ade, C. Buckley, M. Howells, S. Hulbert, C. Jacobsen, J. Kirz, I. McNulty, J. Miao, T. Oversluizen, I. Pogorelsky, and S. Wirick, "X1A: Second Generation Undulator Beamlines Serving Soft X-ray Spectromicroscopy Experiments at the NSLS", *Rev. Sci. Instrum.*, **67/9**, 1-4, (1996).

B. Winn, X. Hao, C. Jacobsen, J. Kirz, J. Miao, S. Wirick, H. Ade, C. Buckley, M. Howells, S. Hulbert, I. McNulty, and T. Oversluizen. "Considerations for a Soft X-ray Spectromicroscopy Beamline", edited by L. E. Berman and J. Arthur, Optics for High-Brightness Synchrotron Radiation Beamlines II, SPIE, **2856**, 100-109, (1996).

X. Zhang, Development and Applications of Quantitative X-ray Microscopy with Chemical Sensitivity, PhD Thesis, Department of Physics, State University of New York at Stony Brook, (1995).

X. Zhang, R. Balhorn, C. Jacobsen, J. Kirz, and S. Williams, "Mapping DNA and Protein in Biological Samples using the Scanning Transmission X-ray Microscope", edited by G.W. Bailey and A.J. Garratt-Reed, Proceedings of the 52 Annual Meeting of the Microscopy Society of America, San Francisco, San Francisco Press, pp. 50-51, (1994).

Beamline X1B

B. Kempgens, A. Kivimaki, H.M. Kuppe, M. Neeb, A.M. Bradshaw, and J. Feldhaus, "One-Electron vs. Multi-Electron Effects in the Near-Threshold C 1s Photoionisation of Acetylene", *J. Chem. Phys.*, **107**, 4219-24, (1997).

B. Kempgens, A. Kivimaki, M. Neeb, H.M. Kuppe, A.M. Bradshaw, and J. Feldhaus, "A High-Resolution N 1s Photoionization Study of the N₂ Molecule in the Near-Threshold Region", *J. Phys.*, **B29**, 5389-5402, (1996).

B. Kempgens, H.M. Kuppe, A. Kivimaki, M. Neeb, K. Maier, U. Hergenhahn, and A.M. Bradshaw, "A Re-appraisal of the Existence of Shape Resonances in the Series C₂H₂, C₂H₄ and C₂H₆", *Phys. Rev. Lett.*, **79**, 35-38, (1997).

A. Kivimaki, B. Kempgens, K. Maier, H.M. Kuppe, M.N. Piancastelli, M. Neeb, and A.M. Bradshaw, "The Vibrational Resolved O 1s Photoelectron Spectrum of CO₂: Vibronic Coupling and Dynamic Core-hole Localization", *Phys. Rev. Lett.*, **79**, 998-1001, (1997).

A. Kivimaki, M. Neeb, B. Kempgens, H.M. Kuppe, K. Maier, and A.M. Bradshaw, "Angle-Resolved Auger Spectra of C₂N₂ Molecule", *J. Phys.*, **B30**, 4279-91, (1997).

M. Neeb, A. Kivimaki, B. Kempgens, H.M. Kuppe, and A.M. Bradshaw, "The C 1s Auger Decay Spectrum of CF₄: an Analysis of the Core-Excited States", *J. Phys.*, **B30**, 93-100, (1997).

S.H. Overbury, D.R. Huntley, D.R. Mullins, K.S. Ailey, and P.V. Radulovic, "Surface Studies of Model Supported Catalysts: NO Adsorption on Rh/CeO₂(001)", *J. Vac. Sci. Technol.*, **A15**, 1647, (1997).

M.N. Piancastelli, A. Kivimaki, B. Kempgens, M. Neeb, K. Maier, and A.M. Bradshaw, "High-Resolution Study of Resonant Decay Following the O 1s π Excitation in CO₂: Evidence for an Overlapping Rydberg Transition", *Chem. Phys. Lett.*, **274**, 13, (1997).

M.N. Piancastelli, M. Neeb, A. Kivimaki, B. Kempgens, H.M. Koppe, K. Maier, and A.M. Bradshaw, "Variation of Cross-Section Enhancement in Decay Spectra of CO under Resonant Raman Conditions", *Phys. Rev. Lett.*, **77**, 4302-4305, (1996).

Beamline X2A

R. Paniago, T.H. Metzger, J. Trenkler, R. Hempelmann, H. Reichert, S. Schmid, P.C. Chow, S.C. Moss and J. Pelsl, "Near-Surface Tricritical Behavior of V₂H(010) at the β₁-β₂ Phase Transition", *Phys. Rev. Brief Reports*, **56**, 16, (1997).

H. Reichert, S.C. Moss, and K.S. Liang, "Anomalous Temperature Dependence of the X-ray Diffuse Scattering Intensity of Cu₃Au", *Phys. Rev. Lett.*, **77**, 4382, (1996).

H. Reichert, S.C. Moss, and K.S. Liang, "Reply to Comment by V. Ozollns, et.al.", *Phys. Rev. Lett.*, **79**, 956, (1997).

H. Reichert, I. Tsatskis, and S.C. Moss, "Temperature Dependent Microstructure of Cu₃Au in the Disordered Phase", NSF/CNRS Workshop on Alloy Theory, *Comput. Mater. Sci.*, **8**, 46, (1997).

Beamline X3A1

R. Bolotovsky, and P. Coppens, "The φ-extent of the Reflection Range in the Oscillation Method According to the Mosaicity Cap Model", *J. Appl. Cryst.*, **30**, 65, (1997).

R. Bolotovsky, and P. Coppens, "The "Seed-Skewness" Method for Integration of Peaks on Imaging Plates II: Analysis of Bias due to Finite Size of the Peak Mask and Treatment of α₁-α₂ Splitting", *J. Appl. Cryst.*, **30**, 244, (1997).

- C.L. Cahill, and J.B. Parise, "The Synthesis and Structure of $\text{MnGe}_4\text{S}_{10} \cdot (\text{C}_6\text{H}_{14}\text{N}_2) \cdot 3\text{H}_2\text{O}$: A Novel Sulfide Framework Analogous to Zeolite-A(BW)", *Chem. Mater.*, **9**, 812, (1997).
- J. Chen, R. Li, J.B. Parise, and D.J. Weidner, "Pressure Induced Ordering in NiMg-Olivine", *Am. Mineral.*, **81**, 1519, (1996).
- P. Coppens, "Time-Resolved Diffraction in Chemistry and Materials Science: the Developing Field of Photocrystallography", *Synch. Rad. News*, **10/1**, 26, (1997).
- A. Darovsky, V. Kezerashvili, P. Coppens, T. Weyhermüller, H. Hummel, and K. Wieghardt, "Temperature-Dependent Electron Transfer in a $\text{Mn}^{\text{II}}\text{Mn}^{\text{III}}(\mu\text{-OH})$ Mixed-Valence Manganese Complex", *Inorg. Chem.*, **35**, 6916, (1996).
- C. Eylem, J.A. Hriljac, D.R. Corbin, and J.B. Parise, "Structure of a Zeolite ZSM-5-Bithiophene Complex as Determined by High Resolution Synchrotron X-ray Powder Diffraction", *Chem. Mater.*, **8**, 844, (1996).
- M. Kunz, K. Leinenweber, J.B. Parise, T.-C. Wu, W.A. Bassett, K. Brister, D.J. Weidner, M.T. Vaughan, and Y. Wang, "The Baddeleyite-Type High Pressure Phase of $\text{Ca}(\text{OH})_2$ ", *J. High Press Res.*, **14**, 311, (1996).
- M. Kunz, D. Xirouchakis, Y. Wang, J. B. Parise, and D.H. Lindsley, "Structural Investigations along the Join $\text{CaTiOSiO}_4 - \text{CaSnOSiO}_4$ ", *Swiss Bull. Min. Pet.*, **77**, 1, (1997).
- J.B. Parise, Y. Wang, G.D. Gwanmesia, J. Zhang, Y. Sinelnikov, J. Chmielowski, D.J. Weidner, and R.C. Liebermann, "The Symmetry of Garnets on the Pyrope ($\text{Mg}_3\text{Al}_2\text{Si}_3\text{O}_{12}$)-Majorite (MgSiO_3) Join", *Geophys. Res. Lett.*, **23**, 3799, (1996).
- K. Prassides, K. Vavekis, K. Kordatos, K. Tanigaki, G.M. Bendele, and P.W. Stephens, "Loss of Cubic Symmetry in Low Temperature $\text{Na}_2\text{RbC}_{60}$ ", *J. Amer. Chem. Soc.*, **119**, 834, (1997).
- K. Tan, Y. Ko, J.B. Parise, J.-H. Park, and A. Darovsky, "A Novel Antimony Sulfied Templated by Dimethylammonium: Its Synthesis and Structural Characterization using Synchrotron Imaging Plate Data", *Chem. Mater.*, **8**, 2510, (1996).

Beamline X3A2

- T. Dobashi, M. Takenaka, F. Yeh, G. Wu, K. Ichikawa, and B. Chu, "Scattering Studies of Poly(urea-urethane) Microcapsule in Suspension", *J. Coll. & Interface Sci.*, **179**, 640, (1996).
- L. Liu, F. Yeh, and B. Chu, "Synchrotron SAXS Study of Crystallization and Microphase Separation in Compatible Mixtures of Tetrahydrofuran-Methyl Methacrylate Diblock Copolymer and Polytetrahydrofuran", *Macromolecules*, **29**, 5336, (1996).
- E.L. Sokolov, F. Yeh, A.R. Khokhlov, and B. Chu, "Nano-Scale Supramolecular Ordering in Gel-Surfactant Complexes: Sodium Alkyl Sulfates in Poly(diallyldimethylammonium Chloride)", *Langmuir*, **26**, 6229, (1996).
- F. Yeh, E.L. Sokolov, A.R. Khokhlov, and B. Chu, "Nano-Scale Supramolecular Structures in Gels of Poly(diallyldimethylammonium chloride) Interacting with Sodium Dodecyl Sulfate", *J. Am. Chem. Soc.*, **118**, 6615, (1996).

Beamline X3B1

- D. Balzar, P.W. Stephens, and H. Ledbetter, "Synchrotron X-ray Diffraction Line Profile", *Fizika*, **A6**, 41, (1997).
- D. Balzar, P.W. Stephens, H. Ledbetter, J. Li, and M.L. Dunn, "Synchrotron X-ray Diffraction Study of the Surface Layer in Poled Ceramic BaTiO₃", *Mat. Res. Soc. Symp. Proc.*, **453**, 715, (1997).
- S.D. Bohle, R.E. Dinnebier, S.K. Madsen, and P.W. Stephens, "Characterization of the Products of the Heme Detoxification Pathway in Malarial Late Trophozoites by X-ray Diffraction", *J. Biol. Chem.*, **272**, 713, (1997).
- C.L. Cleveland, U. Landman, T.G. Schaaff, M.N. Shafiqullin, P.W. Stephens, and R.L. Whetten, "Structural Evolution of Smaller Gold Nanocrystals: The Truncated Decahedral Motif", *Phys. Rev. Letts.*, **79**, 1873, (1997).
- C.L. Cleveland, U. Landman, M.N. Shafiqullin, P.W. Stephens, and R.L. Whetten, "Structural Evolution of Larger Gold Clusters", *Zeitschrift für Physik*, **D40**, 153, (1997).
- R.E. Dinnebier, F. Olbrich, and G.M. Bendele, "Cyclopentadienyl Cesium by High-Resolution X-ray Powder Diffraction", *Acta Cryst.*, **C53**, 699, (1997).
- R.E. Dinnebier, F. Olbrich, S. van Smaalen, and P.W. Stephens, "The *Ab Initio* Structure Determination of Two Polymorphs of Cyclopentadienyl Rubidium in a Single Powder Pattern", *Acta Cryst.*, **B53**, 153, (1997).
- R.E. Dinnebier, M. Pink, J. Sieler, and P.W. Stephens, "Novel Alkali Metal Coordination in Phenoxides: Powder Diffraction Results on C₆H₅OM [M = Li, Na, K, Rb, Cs]", *Inorg. Chem.*, **36**, 3398, (1997).
- W.C. Elliott, P.F. Miceli, T. Tse, and P.W. Stephens, "Temperature and Orientation Dependence of Kinetic Roughening During Homoepitaxy: a Quantitative X-ray Scattering Study of Ag", *Phys. Rev.*, **B54**, 17938, (1996).
- S.W. Huang, Z.H. Ming, Y.L. Soo, Y.H. Kao, M. Tanaka, and H. Munekata, "X-ray Scattering and Absorption Studies of MnAs Thin Films Grown by MBE on GaAs(001) Substrates", *Evolution of Epitaxial Structure and Morphology*, *Mat. Res. Soc. Symp. Proc.*, **399**, 29, (1996).
- C.A. Kuntscher, G.M. Bendele, and P.W. Stephens, "Alkali-Metal Stoichiometry and Structure of K₄C₆₀ and Rb₄C₆₀", *Phys. Rev.*, **B55**, R3366, (1997).
- Z.H. Ming, Y.L. Soo, S. Huang, Y.H. Kao, K. Stair, G. Devane, and C. Choi-Feng, "Structural Ordering in InGaAs/GaAs Superlattices", *J. Appl. Phys.*, **80**, 4372, (1996).
- Z.H. Ming, Y.L. Soo, S.W. Huang, Y.H. Kao, K. Stair, G. Devane, C. Choi-Feng, T. Chang, L.P. Fu, G.D. Gilliland, J. Klem, and M. Hafich, "Semiconductor Superlattices Studied by Grazing Incidence X-ray Scattering and Diffraction", *Optoelectronic Materials - Ordering, Composition Modulation and Self-Assembled Structures*, *Mat. Res. Soc. Symp. Proc.*, **417**, 325, (1996).
- T.M. Nenoff, J.B. Parise, G.A. Jones, L.G. Galya, D.R. Corbin, and G.D. Stucky, "Flexibility of the Zeolite RHO Framework: *In Situ* X-ray and Neutron Powder Structural Characterization of Cation Exchanged BePO- and BeAsO-RHO Analogs", *J. Phys. Chem.*, **100**, 14256, (1996).
- G. Oszlanyi, G. Baumgartner, G. Faigel, and L. Forro, "Na₄C₆₀ an Alkali Intercalated Two-Dimensional Polymer", *Phys. Rev. Lett.*, **78**, 4438, (1997).

G. Oszlanyi, G. Bortel, G. Faigel, L. Granasy, L. Forro, G.M. Bendele, and P.W. Stephens, "Single C-C Bond in $(C_{60})_2^{2-}$ ", *Phys. Rev.*, **B54**, 11849, (1996).

G. Oszlanyi, G. Bortel, G. Faigel, L. Granasy, P.W. Stephens, G.M. Bendele, and L. Forro, "Single C-C Bond in KC_{60} and RbC_{60} ", Fullerenes and Fullerene Nanostructures, edited by H. Kuzmany, J. Fink, M. Mehring, and S. Roth, *World Scientific*, p. 354, (1996).

A.M. Rao, P.C. Eklund, U.D. Venkateswaran, J. Tucker, M.A. Duncan, G.M. Bendele, P.W. Stephens, J.L. Hodeau, L. Marques, M. Núñez-Regueiro, I.O. Bashkin, E.G. Ponyatovsky, and A.P. Morovsky, "Properties of C_{60} Polymerized under High Pressure and Temperature", *Appl. Phys.*, **A64**, 231, (1997).

Y.L. Soo, S.W. Huang, Z.H. Ming, Y.H. Kao, E. Goldburt, R. Hodel, B. Kulkarni, and R. Bhargava, "Investigation of Local Structures Around Luminescent Centers in Doped Nanocrystal Phosphors", Surface/Interface and Stress Effects in Electronic Material Nanostructures, *Mat. Res. Soc. Symp. Proc.* **405**, 283, (1996).

S. van Smaalen, R.E. Dinnebier, H. Katzke, and W. Depmeier, "Structural Characterization of the High-Temperature Phase Transition in $Ca_8[Al_{12}O_{24}](MoO_4)_2$ Aluminate Sodalite using X-ray Powder Diffraction", *J. Sol. State Chem.*, **129**, 130, (1997).

T. Yildirim, L. Barbedette, J.E. Fischer, G. Bendele, P.W. Stephens, C.L. Lin, C. Goze, F. Rachdi, J. Robert, P. Petit, and T.T.M. Palstra, "Synthesis and Properties of Mixed Alkali-Alkaline Earth Fullerides", *Phys. Rev.*, **B54**, 11981, (1996).

Beamline X4A

J.C. Boyington, V.N. Gladyshev, S.V. Khangulov, T.C. Stadtman, and P.D. Sun, "Crystal Structure of Formate Dehydrogenase H: Catalysis Involving Mo, Molybdopterin, Selenocysteine and an Fe4S4 Cluster", *Science*, **275**, 1305, (1997).

J.H. Cate, and J.A. Doudna, "Metal-Binding Sites in the Major Groove of a Large Ribozyme Domain" *Structure*, **4**, 1221, (1996).

J. H. Cate, A.R. Gooding, E. Podell, K. Zhou, B. L. Golden, C.E. Kundrot, T.R. Cech, and J.A. Doudna, "Crystal Structure of a Group I Ribozyme Domain: Principles of RNA Packing", *Science*, **273**, 1678, (1996).

D.C. Chan, D. Fass, J.M. Berger, and P.S. Kim, "Core Structure of gp41 from the HIV Envelope Glycoprotein", *Cell*, **89**, 263, (1997).

X. Duan, F.S. Gimble, and F.A. Quiocho, "Crystal Structure of PI-SceI, a Homing Endonuclease with Protein Splicing Activity", *Cell*, **89**, 555, (1997).

R. Gaudet, A. Bohm, and P.B. Sigler, "Crystal Structure at 2.4 \AA Resolution of the Complex of Transducin $\beta\gamma$ and Its Regulator, Phosducin" *Cell*, **87**, 577, (1996).

F. Guo, D.N. Gopaul, and G.D. Van Duyne, "Structure of Cre Recombinase Complexed with DNA in a Site-Specific Recombination Synapse", *Nature*, **389**, 40, (1997).

W.A. Hendrickson, and C.M. Ogata, "Phase Determination by the Method of Multi-wavelength Anomalous Diffraction (MAD)", *Methods in Enzymology*, **276/28**, 494, (1997).

L. Huang, X. Weng, F. Hofer, G.S. Martin, and S.-H. Kim, "Three-Dimensional Structure of the Ras Interacting domain of RalGDS", *Nat. Struct. Biol.*, **4**, 609, (1997).

S. R. Hubbard, "Crystal Structure of the Activated Insulin Receptor Tyrosine Kinase in Complex with Peptide Substrate and ATP Analog", *EMBO J.*, **16**, 5572, (1997).

R. Kovall, and B. W. Matthews, "Toroidal Structure of λ -Exonuclease", *Science*, **277**, 1824, (1997).

Y.-H. Lee, T.W. Olson, C.M. Ogata, D.G. Levitt, L.J. Banaszak, and A.J. Lange, "Crystal Structure of the Phosphoenzyme Intermediate of Fructose-2,6-bisphosphatase Trapped during the Catalytic Reaction", *Nat. Struct. Bio.*, **4**, 615, (1997).

C.D. Lima, K.L. D'Amico, I. Naday, G. Rosenbaum, E.M. Westbrook, and W.A. Hendrickson, "MAD Analysis of FHIT, a Putative Human Tumor Suppressor from the HIT Protein Family", *Structure*, **5**, 763, (1997).

A. Malhotra, E. Severinova, and S.A. Darst, "Crystal Structure of a σ^{70} Subunit Fragment from *E. coli* RNA Polymerase", *Cell*, **87**, 127, (1996).

E. Martinez-Hackert, S. Harlocker, M. Inouye, H.M. Berman, and A.M. Stock, "Crystallization, X-ray Studies, and Site-Directed Cysteine Mutagenesis of the DNA-Binding Domain of OmpR", *Protein Science*, **5**, 1429, (1996).

E. Martinez-Hackert, and A.M. Stock, "The DNA-Binding Domain of OmpR: Crystal Structure of a Winged Helix Transcription Factor", *Structure*, **5**, 109, (1997) .

M. Ormo, A.B. Cubitt, K. Kallio, L.A. Gross, R.Y. Tsien, and S.J. Remington, "Crystal Structure of the *Aequorea victoria* Green Fluorescent Protein", *Science*, **273**, 1392, (1996).

S. Raghunathan, C.S. Ricard, T.M. Lohman, and G. Waksman, "Crystal Structure of the Homo-Tetrameric DNA Binding Domain of *Escherichia coli* Single-Stranded DNA Binding Protein Determined by Multiwavelength X-ray Diffraction on the Selenomethionyl Protein at 2.9 \AA Resolution", *PNAS (USA)*, **94**, 6652, (1997).

L. Shapiro, J.P. Doyle, P. Hensley, D. R. Colman, and W.A. Hendrickson, "Crystal Structure of the Extracellular Domain from P₀ the Major Structural Protein of Peripheral Nerve Myelin", *Neuron*, **17**, 435, (1996).

F. Sicheri, I. Moarefi, and J. Kuriyan, "Crystal Structure of the Src-Family Tyrosine Kinase Hck", *Nature*, **385**, 602, (1997).

J. L. Smith, A. Thompson, and C. M. Ogata, "Crystallography Going Mad?", *Synch. Rad. News*, **9**, 12, (1996).

S.M. Soisson, B. MacDougall-Shackleton, R. Schleif, and C. Wohlberger, "Structural Basis for Ligand-Regulated Oligomerization of AraC", *Science*, **276**, 421, (1997).

L. Tong, S. Pav, D.M. White, S. Rogers, K.M. Crane, C.L. Cywin, M.L. Brown, and C.A. Pargellis, "A Highly Specific Inhibitor of Human p38 MAP Kinase Binds in the ATP Pocket", *Nat. Struct. Bio.*, **4**, 311, (1997).

L. Tong, C. Qian, M.-J. Massariol, P.R. Bonneau, M.G. Cordingley, and L. Lagace, "A New Serine-Protease Fold Revealed by the Crystal Structure of Human Cytomegalovirus Protease", *Nature*, **383**, 272, (1996).

H. Wu, P. D. Kwong, and W. A. Hendrickson, "Dimeric Association and Segmental Variability in the Structure of Human CD4", *Nature*, **387**, 527, (1997).

D. Xia, C.-A. Yu, H. Kim, J.-Z. Xia, A.M. Kachurin, L. Zhang, L. Yu, and J. Deisenhofer, "Crystal Structure of the Cytochrome bc₁ Complex from Bovine Heart Mitochondria", *Science*, **277**, 60, (1997).

H. Yamaguchi, and W.A. Hendrickson, "Structural Basis for Activation of a Human Lymphocyte Kinase Lck upon Tyrosine Phosphorylation" *Nature*, **384**, 484, (1996).

F. Yang, L.G. Moss, and G.N. Phillips, Jr., "The Molecular Structure of the Green Fluorescent Protein", *Nature Biotechnology*, **14**, 1246, (1996).

Beamline X5

K. Hicks, H. Baghaei, A. Caracappa, A. Cichocki, G. Davenport, R. Finlay, V. Gladyshev, T. Gresko, S. Hoblit, M. Khandaker, O. Kistner, F.X. Lee, R. Lindgren, M. Lucas, L. Miceli, B. Norum, J. Rapaport, A.M. Sandorfi, R. Sealock, L.C. Smith, C.E. Thorn, S. Thornton, C.S. Whisnant, and L.E. Wright, "Spin Asymmetries from ¹⁶O(γ, π) near Δ Resonance Energies", *Phys. Rev.*, **C55**, R12, (1997).

Beamline X6B

R.P. Chiarello, N. C. Sturchio, J. Grace, P. Geissbuhler, L. Sorensen, L. Cheng, and S. Tau, "Otavite-calcite Solid-Solution Formation at the Calcite-water Interface Studied *in situ* by Synchrotron X-ray Scattering", *Geochimica et Cosmochimica Acta*, **61**, 1467-1474, (1997).

S. Krishnan, J.J. Felten, J.E. Rix, J.K.R. Weber, P.C. Nordine, M.A. Beno, S. Ansell, and D.L. Price, "Levitation Apparatus for Structural Studies of High Temperature Liquids using Synchrotron Radiation", *Rev. Sci. Instrum.*, **68**, 3512, (1997).

A. Malik, M.K. Durbin, A.G. Richter, K.G. Huang, and P. Dutta, "Order in Langmuir-Blodgett Films of Lead and Calcium Stearate", *Thin Solid Films*, **144**, 284-285, (1996).

Beamline X7A

P. Armand, A. Goldbach, C. Cramer, R. Csencsits, L. E. Iton, D. L. Price, and M.-L. Saboungi, "Semiconductors in the Disordered State: from Bulk to Nanoscale", *J. Non-Cryst. Solids*, **205**, 797, (1996).

P. Armand, M.-L. Saboungi, D. L. Price, L. Iton, C. Cramer, and M. Grimsditch, "Nanoclusters in Zeolite", *Phys. Rev. Lett.*, **79**, 2061, (1997).

C. L. Bowes, W. U. Huynh, S. J. Kirby, A. Malek, G. A. Ozin, S. Petrov, M. Twardowski, D. Young, R. L. Bedard, and R. Broach, "Dimetal Linked Open Frameworks: [(CH₃)₄N]₂(Ag₂,Cu₂)Ge₄S₁₀", *Chem. Mater.*, **8**, 2147, (1996).

D. J. Buttrey, T. Vogt, G. P. A. Yap, and A. L. Rheingold, "The Structure of Bi₂₆Mo₁₀O₆₉", *Mater. Res. Bull.*, **32**, 947, (1997).

D.G. Castner, P. Favia, and B.D. Ratner, "Deposition of Fluorocarbon Films by Remote RF Glow Discharge", Surface Modification of Polymeric Biomaterials, Edited by B.D. Ratner and D.G. Castner, Plenum Press, New York, pp. 45-52, (1997).

L. Chai, M. A. Akbas, P. K. Davies, and J. B. Parise, "Cation Ordering Transformations in Ba(Mg_{1/3}Ta_{2/3})O₃-BaZrO₃ Perovskite Solid Solutions", *Mater. Res. Bull.*, **32**, 1261, (1997).

- F. C. Chou, A. Aharony, R. J. Birgeneau, O. Entin-Wohlman, M. Greven, A. B. Harris, M. A. Kastner, Y. J. Kim, D. S. Kleinberg, Y. S. Lee, and Q. Zhu, "Ferromagnetic Moment and Spin Rotation Transitions in Tetragonal Antiferromagnetic $\text{Sr}_2\text{Cu}_3\text{O}_4\text{Cl}_2$ ", *Phys. Rev. Lett.*, **78**, 535, (1997).
- D. E. Cox, and R. J. Papoula, "Structure Refinement with Synchrotron Data: R-factors, Errors and Significance Tests", *Mater. Science Forum*, **228**, 233, (1996).
- Y. Fei, C. M. Bertka, and L. W. Finger, "High-Pressure Iron-Sulfur Compound, Fe_3S_2 , and Melting Relations in the Fe-FeS System", *Science*, **275**, 1621, (1997).
- C. C. Freyhardt, R. F. Lobo, S. Khodabandeh, J. E. Lewis Jr., M. Tsapatsis, M. Yoshikawa, M. A. Camblor, M. Pan, M.M. Helmkamp, S. I. Zones, and M. E. Davis, "VPI-8: A High-Silica Molecular Sieve with a Novel "Pinwheel" Building Unit and its Implications for the Synthesis of Extra-Large Pore Molecular Sieves", *J. Amer. Chem. Soc.*, **118**, 7299, (1996).
- R. L. Harlow, N. Herron, and D. L. Thorn, "The Crystal Structures of some New Forms of Aluminum Fluoride as Determined from Their Synchrotron Powder Diffraction Patterns", *Synchrotron Radiation Techniques in Industrial, Chemical and Materials Science*, edited by L. J. Terminello, K. D'Amico, and D. K. Shuh, Plenum, New York, p. 37, (1996).
- M. Kunz, D. Xirouchakis, Y. Wang, J.B. Parise, and D.H. Lindsley, "Structural Investigations along the Join $\text{CaTi}_2\text{Si}_{10}\text{O}_{34}$ - $\text{CaSnSi}_{10}\text{O}_{34}$ ", *Swiss Bull. of Mineral. and Petro.*, **77**, 1-11, (1997).
- K. Leinenweber, and J. B. Parise, "Rietveld Refinement of the Novel Double Perovskite $\text{Ca}_2\text{TiSiO}_6$ ", *Amer. Mineralogist*, **82**, 475, (1997).
- L.H. Lewis, C.H. Sellers, and V. Panchanathan, "Annealing-Induced Property Improvements in 2-14-1 Powders Produced by Inert Gas Atomization", *IEEE Trans. Mag.*, **32**, 4371, (1996).
- L.H. Lewis, C.H. Sellers, and V. Panchanathan, "Factors Affecting Coercivity in Rare-Earth-Based Advanced Permanent Magnetic Materials", *Rare-Earths: Science, Technology and Applications III*, edited by R. G. Bautista, C. O. Bounds, T. W. Ellis, and B. T. Kilbourn, The Minerals, Metals and Materials Society, p. 119, (1997).
- L.H. Lewis, D.O. Welch, and V. Panchanathan, "Exchange-spring" Nd-Fe-B Alloys: Investigations into Reversal Mechanisms and Their Temperature Dependence", *J. Appl. Phys.*, **81**, 4422, (1997).
- R. F. Lobo, S.I. Zones, R.C. Medrud, and T.V. Harris, "Synthesis and Rietveld Refinement of the Small-Pore Zeolite SSZ-16", *Chem. Mater.*, **8**, 2409, (1996).
- R.F. Lobo, M. Tsapatsis, C.C. Freyhardt, S. Khodabandeh, P. Wagner, C.-Y. Chen, K.J. Balkus Jr., S.I. Zones, and M.E. Davis, "Characterization of the Extra-Large-Pore Zeolite UTD-1", *J. Amer. Chem. Soc.*, **119**, 8474, (1997).
- C. Meingast, G. Roth, L. Pintschovius, R.H. Michel, C. Stoermer, M.M. Kappes, P.A. Heiney, L. Brard, R.M. Strongin, and A.B. Smith, III, "Structure, Dynamics, and Phase Transitions in the Fullerene Derivatives C_{60} and C_{61}H_2 ", *Phys. Rev.*, **B54**, 124-131, (1996).
- J. B. Parise, Y. Wang, G. D. Gwanmesia, J. Zhang, and Y. Sinelnikov, "The Symmetry of Garnets on the Pyrope-Majorite Join", *J. Geophys. Res. Lett.*, **23**, 3799, (1996).
- J. B. Parise, K. Tan, P. Norby, Y. Ko, and C. Cahill, "Examples of Hydrothermal Titration and Real Time X-ray Diffraction in the Synthesis of Open Frameworks", *Mater. Res. Soc. Symp. Proc.*, **453**, 103, (1997).

D. L. Price, A. J. G. Ellison, M.-L. Saboungi, R.-Z. Hu, T. Egami, and W. S. Howells, "Short, Intermediate-and Extended-Range Order in Rubidium Germanate Glasses", *Phys. Rev.*, **B55**, 11249, (1997).

P. G. Radaelli, D. E. Cox, M. Marezio, and S.-W. Cheong, "Charge, Orbital and Magnetic Ordering in $\text{La}_{0.5}\text{Ca}_{0.5}\text{MnO}_3$ ", *Phys. Rev.*, **B55**, 3015, (1997).

M. R. Stetzer, P. A. Heiney, J. E. Fischer, and A. R. McGhie, "Thermal Stability of Solid C_{60} ", *Phys. Rev.*, **B55**, 127-131, (1997).

J. Vacinova, J. L. Hodeau, P. Bordet, M. Anne, D. Cox, A. Fitch, P. Pattison, W. Schwegle, H. Graafsma, and Å. Kvick, "Diffraction Anomalous Fine Structure Analysis on $(\text{Bi},\text{Pb})_2\text{PtO}_4$ Powders", *Mater. Science Forum*, **228**, 94, (1996).

W. Wang, D.G. Castner, and D.W. Grainger, "Ultrathin Films of Perfluoropolyether-Grafted Polysiloxanes Chemisorbed Via Alkylthiolate Anchors to Gold Surfaces", *Supramolecular Science*, **4**, 83-99, (1997).

P. M. Woodward, A. W. Sleight, and T. Vogt, "Ferroelectric Tungsten Trioxide", *J. Solid State Chem.*, **131**, 9, (1997).

D. Xirouchakis, M. Kunz, J.B. Parise, and D.H. Lindsley, "Synthesis Methods and Unit-Cell Volume of End-Member Titanite $(\text{CaTi}_5\text{Si}_4\text{O}_4)$ ", *American Mineralogist*, **82**, 748- 753, (1997).

Q. Zhu, L. Li, M. S. Masteller, and G. J. Del Corso, "An Increase of Structural Order Parameter in Fe-Co-V Soft Magnetic Alloy after Thermal Aging", *Appl. Phys. Lett.*, **69**, 3917, (1996).

Beamline X7B

J. Aizenberg, J. Hanson, T.F. Koetzle, S. Weiner, and L. Addadi, "Control of Macromolecule Distribution within Synthetic and Biogenic Single Calcite Crystals", *J. Am. Chem. Soc.*, **119**, 881, (1997).

G. Artioli, K. Ståhl, and J.C. Hanson, "The Dehydration Process in the Natural Zeolite Laumontite: A Real-Time Synchrotron X-Ray Powder Diffraction Study", *Mater. Sci. Forum*, **228**, 369, (1996).

R. Bolt, J. Albertsson, G. Svensson, K. Ståhl, and J.C. Hanson, "A Synchrotron X-Ray Study of Ferroelectric Switching, Domain Reversal and Piezoelectric Moduli in CsTiOAsO_4 under an Applied Electric Field", *J. Appl. Cryst.*, **30**, 383, (1997)

A. N. Christensen, P. Norby, and J. C. Hanson, "*In Situ* Investigation of Magnesium Aluminophosphate Synthesis by Synchrotron X-Ray Powder Diffraction", *Acta Chem. Scand.*, **51**, 249, (1997).

A.N. Christensen, P. Norby, and J.C. Hanson, "Superconducting Cuprates and Related Oxides. IX. *In Situ* Synchrotron X-Ray Powder Diffraction Investigation of the Oxidation and Reduction of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ in a Flow of Oxygen or of Nitrogen Gas in the Temperature Range 400-725°C", *Acta Chemica Scandinavica*, **51**, 340, (1997).

A. N. Christensen, P. Norby, J. C. Hanson, and S. Shimada, "Phase Transition of KN_{O_3} Monitored by Synchrotron X-ray Powder Diffraction", *J. Appl. Cryst.*, **29**, 265, (1996).

M.J. Gray, J.D. Jasper, A.P. Wilkinson, and J.C. Hanson, "Synthesis and Synchrotron Microcrystal Structure of an Aluminophosphate with Chiral Layers Containing λ -Tris(ethylenediamine)cobalt(III)", *Chem. of Mat.*, **9**, 976, (1997).

C.P. Grey, F.I. Poshni, A. Gaultieri, P. Norby, J.C. Hanson, and D.R. Corbin, "Combined MAS NMR and X-ray Powder Diffraction Structural Characterization of Hydrofluorocarbon-134 Adsorbed on Zeolite NaY: Observation of Cation Migration and Strong Sorbate-cation Interactions", *J. Am. Chem. Soc.*, **119**, 1981, (1997).

A. Gaultieri, P. Norby, G. Artioli, and J. Hanson, "Kinetics of Formation of Zeolite Na-A [LTA] from Natural Kaolinates", *Phys. Chem. Minerals*, **24**, 191, (1997).

A. Gaultieri, P. Norby, G. Artioli, and J. Hanson, "Kinetic Study of Hydroxysodalite Formation from Natural Kaolinates by Time-Resolved Synchrotron Powder Diffraction", *Microporous Materials*, **9**, 189, (1997).

A. Gaultieri, P. Norby, J. Hanson, and J. Hriljac, "Rietveld Refinement using Synchrotron X-ray Powder Diffraction Data Collected in Transmission Geometry using an Imaging-Plate Detector: Application to Standard m -ZrO₂", *J. Appl. Cryst.*, **29**, 707, (1996).

T. Hänninen, I. Mutikainen, V. Saanila, M. Ritala, M. Leskel, and J.C. Hanson, "[Ca(Thd)₂(Tetraen)]: A Monomeric Precursor for Deposition of CaS Thin Films", *Chem. Mat.*, **9**, 1234, (1997).

R.A. Holroyd, J.M. Preses, and J.C. Hanson, "Excited Singlet State Yields in Hydrocarbon Liquids Exposed to X-Rays", *J. Phys. Chem.*, **101**, 6931, (1997).

R.E. Morris, S.J. Weigel, P. Norby, J.C. Hanson, and A.K. Cheetham, "In Situ Single-Crystal X-ray Diffraction Study of Crystallization Kinetics in Clathrasil Dodecasil-3C (MTN)", *J. Synch. Rad.*, **3**, 301, (1996).

P. Norby, "Synchrotron Powder Diffraction using Imaging Plates; Crystal Structure Determination and Rietveld Refinement", *J. Appl. Crystall.*, **30**, 21, (1997).

P. Norby, "Hydrothermal Conversion of Zeolites; An In situ Synchrotron X-Ray Powder Diffraction Study", *J. Am. Chem. Soc.*, **119**, 5215, (1997).

J.B. Parise, K. Tan, P. Norby, Y. Ko, and C. Cahill, "Examples of Hydrothermal Titration and Real Time X-ray Diffraction in the Synthesis of Open Frameworks", *Mat. Res. Soc. Symp. Proc.*, **453**, 103, (1997).

K. Ståhl, G. Artioli, and J.C. Hanson, "The Dehydration Process in the Zeolite Laumontite: A Real-Time Synchrotron X-Ray Powder Diffraction Study", *Phys. Chem. Minerals*, **23**, 328, (1996).

P. Wochner, X. Xiong, P.C. Chow, and S.C. Moss, "X-ray Study of Two-Phase Coexistence in a C₆₀ Single Crystal Through the Cubic-Cubic Phase Transition at 260K", *Phys. Rev.*, **B55**, 5678, (1997).

X. Xiong, Q. Zhu, Z.G. Li, S.C. Moss, H.H. Feng, P.H. Hor, D.E. Cox, S. Bhavaraju, and A.J. Jacobson, "Synchrotron X-ray Study of Interstitial Oxygen Ordering in the Superconducting Phase of La₂CuO_{4+δ}", *J. Mat. Res.*, **11**, 2121, (1996).

Beamline X8A and X8C

J.J. Fitch, R.L. Blake, A.J. Burek, A.M. Clark, D.E. Graessle, B. Harris, D.A. Schwartz, and J.B. Sweeney, "AXAF Synchrotron Witness Mirror Calibrations, 2-12 keV", in Grazing Incidence and Multilayer X-ray Optical System, *SPIE*, **3113**, 30-39, (1997).

D.E. Graessle, A.J. Burek, J.J. Fitch, B. Harris, D.A. Schwartz, and R.L. Blake, "Optical Constants from Synchrotron Reflectance Measurements of AXAF Witness Mirrors, 2-12 keV", in Grazing Incidence and Multilayer X-ray Optical System, *SPIE*, **3113**, 52-64, (1997).

P. J. Loll, A. E. Bevivino, B. D. Korty, and P. H. Axelsen, "Simultaneous Recognition of a Carboxylate-containing Ligand and an Intramolecular Surrogate Ligand in the Crystal Structure of an Asymmetric Vancomycin Dimer", *J. Am. Chem. Soc.*, **119**, 1516, (1997).

Beamline X9A

B. Sclavi, S. Woodson, M.R. Chance, and M.D. Brenowitz, "Examining the Conformational Dynamics of Macromolecules with Time-Resolved X-Ray 'Footprinting' ", *Structure*, **5**, 865-869, (1997).

B. Sclavi, S. Woodson, M. Sullivan, M.R. Chance, and M. Brenowitz, "Time-Resolved Synchrotron X-Ray 'Footprinting', a New Approach to the Study of Nucleic Acid Structure and Function: Application to Protein-DNA Interactions and RNA Folding", *J. Mol. Biol.*, **266**, 144-159, (1997).

B. Sclavi, S. Woodson, M. Sullivan, M.R. Chance, and M.D. Brenowitz, "X-Ray 'Footprinting' Analysis of the Mg²⁺ Dependent Folding of the Tetrahymena Thermophila Ribozyme", *Prog. in Biophys. & Molecular Biology*, **65**, 85, (1996).

B. Sclavi, S. Woodson, M. Sullivan, M.D. Brenowitz, and M.R. Chance, "Kinetics of Folding of the Tetrahymena Thermophila Group I Intron", *Biophysical J.*, **72**, A422, (1997).

David L. Tierney, XAS Characterization of Bacterial Superoxide Dismutase and NMR Characterization of Substrate Binding in Phthalate Dioxygenase, Ph.D. Thesis, University of Michigan, (1996).

Beamline X9B

S.C. Goldsmith, N. Pokala, P. Matsudaira, and S.C. Alom, "Crystallization and Preliminary Crystallographic Analysis of the N-terminal Actin Binding Domain of Human Fimbrin", *Proteins: Structure, Function & Genetics*, **28**, 452-453, (1997).

J.C. Gonzalez, K. Peariso, J. Penner-Hahn, and R.G. Matthews, "Cobalamin-Independent Methionine Synthase from *Escherichia coli*: A Zinc Metalloenzyme", *Biochem.*, **35**, 12228-12234, (1996).

Z. Gu, J. Dong, C.B. Allan, S.B. Choudhury, R. Franco, J.J.G. Moura, I. Moura, J. LeGall, A.E. Przybyla, W.R. Roseboom, S.P.J. Albracht, M.J. Axley, R.A. Scott, and M.J. Maroney, "Structure of the Ni Sites in Hydrogenases by X-Ray Absorption Spectroscopy. Species Variation and the Effects of Redox Poise", *J. Am. Chem. Soc.*, **118**, 11155-11165, (1996).

P. Henderson, D. Beyer, U. Jonas, O. Karthaus, H. Ringsdorf, P.A. Heiney, N.C. Maliszewskyj, S.S. Ghosh, O. Mindyuk, and J.Y. Josefowicz, "Complex Ordering in Thin Films of Di-and Trifunctionalized Hexaalkoxy Triphenylene Derivatives", *J. Am. Chem. Soc.*, **119**, 4740-4748, (1997).

K.C. Holmes, "The Swinging Lever-Arm Hypothesis of Muscle Contraction", *Current Biology* **7**, R112-118, (1997).

K.C. Holmes, "Muscle Proteins: Their Actions and Interactions", *Current Opinion in Structural Biology*, **6**, 781-789, (1996).

H. Huang, Structural Characterization of Organocopper Reagents, PhD. Thesis, University of Michigan, (1997).

H.C. Lee, E.M. Scheuring, J. Peisach, and M.R. Chance, "ESEEM and EXAFS Studies of Models of OxyCo-

Substituted Hemoproteins: Correlating Electron-Nuclear Interactions and Metal-Ligand Bond Lengths", *Biophysical J.*, **72**, A427, (1997).

S. Mahapatra, J. A. Halfen, E. C. Wilkinson, G. Pan, X. Wang, V. G. Young, Jr., C. J. Cramer, L. Que, Jr. and W. B. Tolman, "Structural, Spectroscopic, and Theoretical Characterization of Bis(m-oxo)dicopper Complexes, Novel Intermediates in Copper-Mediated Dioxygen Activation", *J. Am. Chem. Soc.*, **118**, 11555-11574, (1996).

M. J. Maroney, C. B. Allan, S. B. Choudhury, and Z. Gu, "Redox Metalloenzymes with S-donor Ligands. Hydrogenase: A Case Study", Transition Metal Sulfur Chemistry: Biological and Industrial Significance, edited by E. I. Stiefel and K. Matsumoto, *ACS Symposium Series*, **653**, 74-100, (1996).

L.M. Miller, A.J. Pedraza, and M.R. Chance, "Identification of Conformational Substrates Involved in Nitric Oxide Binding to Ferric and Ferrous Myoglobin Through Difference Fourier Transform Infrared Spectroscopy", *Biophysical J.*, **72**, A425, (1997).

M.J. Nelson, L.T. Durney, and R.C. Scarrow, "Nitrile Hydratase from Rhodococcus rhodochrous J1 Contains a Non-Corrin Cobalt Ion with Two Sulfur Ligands", *J. Amer. Chem. Soc.*, **115**, 9194-9195, (1996).

F. Schlunzen, H.A.S. Hansen, J. Thygesen, N. Volkmann, I. Levine, J. Harmes, H. Bartels, A. Bashan, Z. Berkovitch-Yellin, I. Sagi, F. Franceschi, S. Krumbholz, M. Geva, S. Weinstain, I. Agmon, N. Boddejer, S. Morlang, R. Sharon, A. Dribin, M. Peretz, V. Weinrich, and A. Yonath, "A Milestone in Ribosomal Crystallography: The Construction of Preliminary Electron Density Maps at Intermediate Resolution", *Biochem & Cell Biol.*, **73**, 739, (1996).

L. Shu, Y. Liu, J.D. Lipscomb, and L. Que, Jr., "X-Ray Absorption Spectroscopic Studies of the Methane Monooxygenase Hydroxylase Component from Methylosinus Trichosporum OB3b", *J. Bioinorganic Chem.*, **1**, 297-304, (1996).

L. Shu, J.C. Nesheim, K. Kauffmann, E. Münck, J.D. Lipscomb, and L. Que, Jr. "An Fe_2O_2 Diamond Core Structure for the Key Intermediate Q of Methane Monooxygenase", *Science*, **25**, 515-518, (1997).

D.L. Tierney, XAS Characterization of Bacterial Superoxide Dismutase and NMR Characterization of Substrate Binding in Phthalate Dioxygenase, PhD. Thesis, University of Michigan, (1996).

H. Wang, G. Peng, L.M. Miller, E.M. Scheuring, S.J. George, M.R. Chance, and S.P. Cramer, "Iron L-edge X-ray Absorption Spectroscopy of Myoglobin Complexes and Photolysis Products", *J. Amer. Chem. Soc.*, **119**, 4921-4928, (1997).

X. Wang, C. R. Randall, and L. Que, Jr., "X-ray Absorption Spectroscopic Studies of an FeZn Derivative of Uteroferrin", *Biochemistry*, **35**, 13946-13954, (1996).

K. Zhang, A.M. Edwards, J. Dong, J.A. Chupa, and J.K. Blasie, "XAFS on Vectorially-oriented Single Monolayer Protein Samples", *J. de Phys. IV Colloque*, **7**, C2-593-C2-597, (1997).

Beamline X10A

P. Fenter, A. Eberhardt, K.S. Liang, and P. Eisenberger, "Molecular Epitaxy and Strain in Self-Assembled Monolayers", *J. Chem. Phys.*, **106**, 1600, (1997).

P. Fenter, F. Schreiber, L. Zhou, P. Eisenberger, and S.R. Forrest, "*In Situ* Studies of Morphology, Strain, and Growth Modes of a Molecular Organic Thin Film", *Phys. Rev.*, **B56**, 3046, (1997).

Beamline X10B

J. Li, and H.D. Abruna, "Coadsorption of Sulfate/Bisulfate Anions with Hg Cations During Hg Underpotential Deposition on Au(111): An *In Situ* X-ray Diffraction Study", *J. Phys. Chem.*, **B101**, 24-252, (1997).

Beamline X10C

P. Schmuki, S. Virtanen, A. J. Davenport, and C. M. Vitus, "In *situ* X-ray Absorption Near-edge Spectroscopic Study of the Cathodic Reduction of Artificial iron Oxide Passive Films", *J. Electrochem. Soc.*, **143/2**, 574-582, (1996).

P. Schmuki, S. Virtanen, A. J. Davenport, and C. M. Vitus, "Transpassive Dissolution of Cr and Sputter-Deposited Cr Oxides Studied by *in situ* X-ray near edge Spectroscopy", *J. Electrochem. Soc.*, **143**, 3997, (1996).

P. Schmuki, S. Virtanen, H.S. Isaacs, A.J. Davenport, H. Böhni, and T. Stenberg, "In *situ* XANES Studies on the Electrochemical Behavior of Thin (Fe,Cr)-oxide Films used as Models for Passive Films", Surface Oxide Films, edited by J. Bardwell, *Electrochemical Soc.*, **96/18**, 234, (1996).

S. Virtanen, P. Schmuki, A. J. Davenport, and C.M. Vitus, "Dissolution of Artificial Iron Passive Films Studied by *in situ* X-ray Absorption near Edge Spectroscopy", *J. Electrochem. Soc.*, **144**, 198, (1997).

S. Virtanen, P. Schmuki, A. J. Davenport, and C.M. Vitus, "Dissolution of Sputter-Deposited Iron Oxide films used as a Model for the Passive film on Iron", Critical Factors for Localized Corrosion II, edited by P.M. Natishan, R.G.Kelly, G.S. Frankel, and R.C. Newman, *Electrochemical Soc.*, **95/15**, 241, (1996).

Beamline X11A

T. Alcacio, XAFS Analysis of Lead Sorption at the Mineral/Water Interface, M.S. Thesis, University of Delaware, (1997).

D. Aldrich, Characterization of the Solid Phase Reaction of Titanium with Silicon Germanium Alloys: Interface Reactions, Phase Formation and Stability, Thesis, North Carolina State University, (1995).

O. Alexeev, M. Shelef, and B.C. Gates, "MgO-supported Platinum-Tungsten Catalysts Prepared from Organo-metallic Precursors: Platinum Clusters Isolated on Dispersed Tungsten", *J. Catal.*, **163**, 1, (1996).

M. Balasubramanian, Studies of Ternary Doped Intermetallics and Nanostructured Materials Using X-ray Absorption Spectroscopy, Thesis, University of Connecticut, (1996).

B. I. Boyanov, Support and Temperature Effects in Platinum Clusters, Thesis, Illinois Institute of Technology, (1995).

D.L. Brewe, S.M. Heald, B. Barg, F.C. Brown, K.H. Kim, and E.A. Stern, "Capillary X-ray Compressor: Principle vs. Practice, X-ray Microbeam Technology and Applications", edited by W. Yun, *SPIE*, **2516**, 197, (1996).

J.-R. Chang, J.-F. Lee, S.D. Lin, and A.S. Lin, "Carbon-Supported Platinum Catalyst Electrode: Characterization by Transmission Electron Microscopy, X-ray Absorption Spectroscopy, and Electrochemical Half-Cell Measurement on a Phosphoric Acid Fuel Cell", *J. of Phys. Chem.*, **99**, 14798, (1995).

Y. Dao, Growth and Characterization of $(\text{Ti}_{1-x}\text{Zr}_x)\text{Si}_2$ Thin Films on Silicon, Thesis, North Carolina State University, (1995).

M.J. Eick, Dissolution Kinetics of Lunar Simulants and Sorption of Oxyanions and Nickel on Secondary Weathering Products, Ph.D. Dissertation, University of Delaware, (1995).

M. Endregard, D.G. Nicholson, M. Stöcker, and G. Lamble, "Cobalticenium Ions Adsorbed on Large-Pore Alumininophosphate VPI-5 Studied by XAS, ¹³C Solid-state NMR and FT IR", *J. Mat. Chem.*, **5**, 485, (1995).

S.E. Fendorf, Sorption and Oxidation Mechanisms of Hydrolyzable Metal Ions on Oxide Minerals, Ph.D. Dissertation, University of Delaware, (1992).

S.E. Fendorf, M.J. Eick, P.R. Grossl and D.L. Sparks, "Arsenate and Chromate Retention Mechanisms on Goethite. 1. Surface Structure", *Environ. Sci. Technol.*, **31**, 315-320, (1997).

S.E. Fendorf, and D.L. Sparks, "Application of Surface Spectroscopies and Microscopies to Elucidate Sorption Mechanisms on Oxide Surfaces", *Trans. of Int. Soc. Soil Sci.*, **3a**, 182-199, (1994).

S.E. Fendorf, and D.L. Sparks, "Mechanisms of Chromium(III) Sorption on Silica: II. Effects of Reaction Conditions", *Environ. Sci. Technol.*, **28**, 290-297, (1994).

S.E. Fendorf, D.L. Sparks, and M. Fendorf, "Mechanisms of Aluminum Sorption on Birnessite: Influences on Chromium Oxidation", *Trans. of Int. Soc. Soil Sci.*, **3a**, 129-145, (1994).

S.E. Fendorf, M.J. Eick, P.R. Grossl, and D.L. Sparks, "Arsenate and Chromate Retention Mechanisms on Goethite: Surface Structure", *Environ. Sci. Tech.*, **31**, 315, (1997).

A. Frenkel, B. Barg, S.M. Heald, F.C. Brown, K.H. Kim, and E.A. Stern, "Optimization of Monochromatic Crystal Bending Designs Using Computer Solutions", **67**, 9, (1996).

A.I. Frenkel, E.A. Stern, and F. A. Chudnovsky, "Metal-Insulator Transition and Local Structure of V₂O₃", *J. Phys. IV France 7 (Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure)*, pp. C2-1061-C2-1063, (1997).

A.I. Frenkel, E.A. Stern, and F.A. Chudnovsky, "Local Structure Changes in V₂O₃ Below and Above the Metal-Insulator Transition", *Solid State Comm.*, **102**, 637, (1997).

A.I. Frenkel, E.A. Stern, A. Rubshtein, A. Voronel, and Y. Rosenberg, "Local Structural Distortions in Quenched Au-Cu Alloys", *J. Phys. IV France 7, Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure*, pp. C2-1005-C2-1006, (1997).

A.I. Frenkel, E.A. Stern, A. Voronel, and S.M. Heald, "Lattice Strains in Disordered Mixed Salts", *Solid State Commun.*, **99**, 67, (1996).

A.I. Frenkel, E.A. Stern, A. Voronel, A. Rubshtein, Y. Ben-Ezra, and V. Fleurov, "Redistribution of La-Al Nearest-Neighbor Distances in the Metallic Glass Al_{0.91}La_{0.09}", *Phys. Rev.*, **B54**, 884, (1996).

J.L. Fulton, D.M. Pfund, S.L. Wallen, M. Newville, and E.A. Stern, "Rubidium Ion Hydration in Ambient and Supercritical Water", *J. of Chem. Phys.*, **105/6**, 2161, (1996).

P.R. Grossl, M.J. Eick, S. Goldberg, C.C. Ainsworth, and D.L. Sparks, "Arsenate and Chromate Retention Mechanisms on Goethite. 2. Kinetic Evaluation using a Pressure-jump Relaxation Technique", *Environ. Sci. Technol.*, **31**, 321-326, (1997).

A. Hamid Muhammed Fasihuddin, L-edge X-ray Absorption Study of B-phase $\text{Ni}_x\text{Al}_{100-x}$ and of the effects of Substitutional Fe Atoms on its Local Electronic Structure, Thesis, University of Connecticut, (1997).

D. Haskel, M. Qian, E.A. Stern, and M. Sarikaya, "Development of EXELFS for Nanoscale Atomic Structure Determination", J. Phys. IV France 7 (Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure), pp. C2-557-C2-560 (1997).

D. Haskel, E.A. Stern, D.G. Hinks, A.W. Mitchell, J.D. Jorgenson, and J.I. Budnick, "Dopant and Temperature Induced Structural Phase Transitions in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ ", Phys. Rev. Lett., **76**, 439, (1996).

D. Haskel, and E.A. Stern, "Altered Sr Atomic Environment in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ ", J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure, pp. C2-1177-C2-1178, (1997).

D. Haskel, E.A. Stern, D.G. Hinks, A.W. Mitchell, and J.D. Jorgensen, "Altered Sr Environment in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ ", Phys. Rev., **B56**, R521, (1997).

S.M. Heald, D.L. Brewe, B. Barg, K.H. Kim, F.C. Brown, and E.A. Stern, "Micro-XAS Using Tapered Capillary Concentrating Optics", J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure, pp. C2-297-C2-301, (1997).

S.M. Heald, D.L. Brewe, K.H. Kim, F.C. Brown, B. Barg, and E.A. Stern, "Capillary Concentration for Synchrotron Radiation Beamlines", Optics for High Brightness Synchrotron Radiation Beamlines #2, edited by Lonny E. Berman and John Arthur, SPIE, **2856**, 36, (1996).

J. Kropf , XAFS and Reflectivity Investigations of Solid-Solid Interfaces, Ph.D. Dissertation , Notre Dame University, (1997).

Q. Lu, XAFS Investigations of Structural Properties at Internal Interfaces, Ph.D. Dissertation, Notre Dame University, (1996).

Q. Lu, B. A. Bunker, H. Lou, A. J. Kropf, K. M. Kemner, J. K. Furdyna, and G. C. Hua, "X-ray Study of Atomic Correlations in ZnCdSeTe Epitaxial Thin Films", Phys. Rev., **B55**, 9910, (1997).

A.N. Mansour, and C.A. Melendres, "Chemistry, Structure and Morphology of Native and Passive Oxide films on Aluminum Rich Amorphous Al-Fe-Ce Alloys", Proceedings of the Tri-Service Conference on Corrosion, p. 129, (1994).

J. McBreen, X.Q. Yang, and H.S. Lee, "X-Ray Absorption Studies of $\text{NiBr}_2(\text{PEO})_8$ and $\text{ErBr}_3(\text{PEO})_{12}$ Complexes", Macromol. Symp. **105**, 185 (1996).

A. Moen, and D. G. Nicholson, "Reduction of Copper(II) with Subsequent Disproportionation of Copper(I) During the Hydrothermal Syntheses of Microporous Silicoaluminium Phosphates SAPO-5 and -11", J. Chem. Soc. Faraday Trans., **91**, 3529, (1995).

M. Newville , Local Thermodynamic Measurements of Dilute Binary Alloys using XAFS, Thesis, University of Washington, (1995).

M. Newville, J.L. Fulton, D.M. Pfund, S.L. Wallen, E.A. Stern, and Y. Ma, "XAFS Measurements of Rb-O Bonds in Ambient and Supercritical Water", J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure, pp. C2-1007-C2-1008 (1997).

P. A. Northrup, Topaz: Differential Incorporation and Growth Kinetics Controlled by Detailed Surface Structure, State University of New York at Stony Brook, Thesis, (1996).

K.I. Pandya, K.E. Swider, D.A. Corrigan, and W.E. O'Grady, "In Situ Evidence for Quadrivalent Nickel in Nickel Battery Electrodes", *J. Electrochem. Soc.*, **143**, 1601, (1996).

M. Qian, M. Sarikaya, and E.A. Stern, "EXELFS (-Data Renormalization", *Ultramicroscopy*, **68**, 163, (1997).

D.E. Ramaker, H. Sambe, H. Qian, and W.E. O'Grady, "Identification of Resonant, Two Electron, and Interatomic features in K and L23 NEXAFS Spectra", *Physica*, **B208 & 209**, 49, (1995).

B. Ravel , Ferroelectric Phase Transitions in Oxide Perovskites Studied by XAFS, Thesis, University of Washington, (1997).

B. Ravel, and E.A. Stern, "Temperature and Polarization Dependent XANES Measurements on Single Crystal PbTiO_3 ", *J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure*, pp. C2-1223-C2-1224, (1997).

M. Sarikaya, M. Qian, and E.A. Stern, "EXELFS Revisited", *Micron*, **27**, 449-466, (1996).

A.M. Scheidegger, and D.L. Sparks, "A Critical Assessment of Sorption-Desorption Mechanisms at the Soil Mineral/water Interface", *Soil Sci.*, **161**, 813-831, (1996).

A.M. Scheidegger, and D.L. Sparks, "Kinetics of the Formation and the Dissolution of Nickel Surface Precipitates on Pyrophyllite", *Chem. Geol.*, **132**, 157-164, (1996).

A.M. Scheidegger, M. Fendorf, and D.L. Sparks, "Mechanisms of Nickel Sorption on Pyrophyllite: Macroscopic and Microscopic Approaches", *Soil Sci. Soc. Am. J.*, **60**, 1763-1772, (1996).

A.M. Scheidegger, G.M. Lamble, and D.L. Sparks, "Spectroscopic Evidence for the Formation of Mixed-cation Hydroxide Phases upon Metal Sorption on Clays and Aluminum Oxides", *J. Colloid Interf. Sci.*, **18**, 118-120, (1997).

N. Sicron, Y. Yacoby, E.A. Stern, and F. Dogan, "XAFS Study of the Antiferroelectric Phase Transition in PbZrO_3 ", *J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure*, pp. C2-1047-C2-1049, (1997).

E.A. Stern, "XAFS and Thermal Averaging", *J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure*, pp. C2-137-C2-140, (1997).

E.A. Stern, "Development of XAFS into a Structure Determination Technique", *Roentgen Centennial: X-Rays in Natural and Life Sciences*, Edited by A. Haase, G. Landwehr, and E. Umbach, World Scientific, Singapore, pp. 323-340, (1997).

E.A. Stern, and Y. Yacoby, "Structural Disorder in Perovskite Ferroelectric Crystals As Revealed by XAFS", *J. Phys. & Chem. of Solids*, **57**, 1449-1455, (1996).

R.V. Vetrinskii, V.L. Kraizman, A.A. Novakovich, Ph.V. Demekhin, S.V. Urashdin, B. Ravel, and E.A. Stern, "Pre-Edge Fine Structure (PEFS) of the K-XAS for the 3d Atoms in Compounds: A New Tool for Quantitative Atomic Structure Determination" *J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure*, pp. C2-107-C2-110, (1997).

F. Wang, B. Ravel, Y. Yacoby, E.A. Stern, and R. Ingalls, "The Effect of Hydrostatic Pressure on the Local Structure of $K_{1-x}Na_xTaO_3$ and $Kta_{1-x}Nb_xO_3$ ", J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure, pp. C2-1225-C2-1226, (1997).

K. Xia, W.F. Bleam and P.A. Helmke, "Studies of the Nature of Binding Sites of First-row Transition Elements Bound to Aquatic and Soil Humic Substances using X-ray Absorption Spectroscopy", *Geochim. Cosmochim. Acta*, **61**, 2223-2225, (1997).

K. Xia, W.F. Bleam, and P.A. Helmke, "Studies of the Nature of Cu^{2+} and Pb^{2+} Binding Sites in Soil Humic Substances using X-ray Absorption Spectroscopy", *Geochim. Cosmochim. Acta*, **61**, 2211-2221, (1997).

K. Xia, A. Mehadi, R.W. Taylor, and W.F. Bleam, "X-ray Absorption and Electron Paramagnetic Resonance Studies of Cu(II) Sorbed to Silica: Surface-induced Precipitation at low Surface Coverages", *J. Colloid Interface Sci.*, **185**, 252-257, (1997).

Y. Yacoby, S.M. Heald, and E.A. Stern, "Local Oxygen Octahedra Rotations in $Ba_{1-x}K_xBiO_3$ and $BaBiO_3$ ", *Solid State Commun.*, **101**, 801, (1997).

Y. Yacoby, S.M. Heald, and E.A. Stern, "Local Oxygen Octahedra Rotations in $Ba_{1-x}K_xBiO_3$ ", J. Phys. IV France 7 Proceedings of the 9th International Conference on X-Ray Absorption Fine Structure, pp. C2-1081-C2-1083, (1997).

Y. Yacoby, and E.A. Stern, "Structural Disorder in Crystals Undergoing Displacive Type Structural Phase Transitions As Revealed by XAFS", *Comments of Cond. Mat. Phys.*, **18**, 1, (1996).

Y. Zhang , XAFS Research on Biological Systems, M.S., University of Washington, (1995).

A. Zhao, Structurally Well-Defined Supported Iridium cluster Catalysts: Synthesis, Characterization, and Catalysis, University of Delaware, Thesis, (1996).

Beamline X12B

M.A. Canady, S.B. Larson, J. Day, and A. McPherson, "Crystal Structure of Turnip Yellow Mosaic Virus", *Nat. Struc. Biol.*, **3/ 9**, 771, (1996).

T.R. Gamble, F.F. Vajdos, S. Yoo, D.K. Worthylake, M. Houseweart, W.I. Sundquist, and C.P. Hill, "Crystal Structure of Human Cyclophilin A Bound to the Amino-terminal Domain of HIV-1 Capsid", *Cell*, **87**, 1285, (1996).

L.J. Harris, S.B. Larson, K.W. Hasel, and A. McPherson, "Refined Structure of an Intact IgG2a Monoclonal Antibody", *Biochemistry*, **36/7**, 1581, (1997).

S. Koszelak, J.D. Ng, J. Day, T.-P. Ko, A. Greenwood, and A. McPherson, "The Crystallographic Structure of the Subtilisin Protease from *Penicillium Cyclopium*", *Biochemistry*, **36**, 6597, (1997).

H. Lin, J.J. Dunn, B.J. Luft, and C.L. Lawson, "Crystal Structure of Lyme Disease Antigen Outer Surface Protein A Complexed with an Fab", *Biochemistry*, **94**, 3584, (1997).

A.J. Malkin, Y.G. Kuznetsov, and A. McPherson, "Defect Structure of Macromolecular Crystals", *J. Struc. Biol.*, **117**, 124, (1996).

A.J. Quantock, N.J. Fullwood, EJ-MA. Thonar, S.R. Waltman, M.S. Capel, M. Ito, S.M. Verity, and D.J. Schanzlin, "Macular Corneal Dystrophy Type II: Multiple Studies on a Cornea with Low Levels of Sulphated Keratan Sulphate", *Eye*, **11**, 57, (1997).

A.J. Quantock, S.M. Verity, and D.J. Schanzlin, "Organization of Collagen in the Lyophilized Cornea", *J. Refract. Surg.*, **13**, 169, (1997).

M.O. Skidmore, and M.R. Sawaya, et al., "Crystallization of the A Alpha Subunit of Protein Phospahatase 2A", *Protein Science*, **5**, 1198, (1996).

R.M. Story, and T.A. Steitz, "Structure of the recA Protein-ADP Complex", *Nature*, **355**, 374, (1992).

R.M. Story, I.T. Weber, and T.A. Steitz, "The Structure of the *E. coli* recA Protein Monomer and Polymer", *Nature*, **355**, 318, (1992).

Beamline X12C

K.M. Barkigia, D. Melamed, R.M. Sweet, K.M. Smith, and J. Fajer, "Self-Assembled Zinc Pheophorphyrin Dimers. Models for the Supramolecular Antenna complexes of Green Photosynthetic Bacteria?", *Spectrochimica Acta*, **53A**, 463, (1997).

V. Biou, F. Shu, and V. Ramakrishnan, "X-ray Crystallography shows that Translational Initiation Factor IF3 consists of two Compact a/b Domains Linked by an α -helix", *EMBO J.*, **14**, 4056, (1995).

H. Blanchard, P. Grochulski, Y. Li, S. Arthur, P. Davies, J.S. Elce, and M. Cygler, "Structure of a Calpain Ca^{2+} -Binding Domain Reveals a Novel EF-Hand and Ca^{2+} -Induced Conformational Changes", *Nat. Struct. Bio.*, **4**, 532, (1997).

Y. Bourne, P. Taylor, and P. Marchot, "Acetylcholinesterase Inhibition by Fasciculin: Crystal Structure of the Complex", *Cell*, **83**, 503, (1995).

M.A. Canady, S.B. Larson, J. Day, and A. McPherson, "Crystal Structure of Turnip Yellow Mosaic Virus", *Nat. Struct. Bio.*, **3**, 771, (1996).

J. Carey, N. Combatti, D.E.A. Lewis, and C.L. Lawson, "Cocrystals of *Escherichia coli* trp Repressor Bound to an Alternative Operator DNA Sequence", *J. Mol. Biol.*, **234**, 496, (1993).

M.S. Chapman, J. Tsao, and M.G. Rossmann, "*Ab initio* Phase Determination for Spherical Viruses: Parameter Determination for Spherical-Shell Models", *Acta Cryst.*, **A48**, 301, (1992).

X. Cheng, S. Kumar, J. Posfai, J.W. Pflugrath, and R.J. Roberts, "Crystal Structure of the HhaI DNA Methyltransferase Complexed with S-Adenosyl-L-Methionine", *Cell*, **74**, 299, (1993).

E. Cheung, L. D'Ari, J.C. Rabinowitz, D.H. Dyer, and B.L. Stoddard, "Purification, Crystallization, and Preliminary X-ray Studies of a Bifunctional 5,10-Methenyl/Methyl ene Tetrahydrofolate Cyclohydrolase/Dehydrogenase from *Escherichia coli*", *Proteins*, **27**, 322, (1997).

J.B. Clarage, M.S. Clarage, W.C. Phillips, R.M. Sweet, and D.L.D.C. Caspar, "Correlations of Atomic Movements in Lysozyme Crystals", *Proteins: Structure, Function, and Genetics*, **12**, 145, (1992).

C. Davies, S.W. White, and V. Ramakrishnan, "The Crystal Structure of Ribosomal Protein L14 Reveals an Important Organizational Component of the Translational Apparatus", *Structure*, **4**, 55, (1996).

L.T.J. Delbaere, R.M. Sweet, and L.J. DeLucas, "Microgravity Improvement of Protein Crystals on STS-62", Spacebound '94 Proceedings, pp. 87-88, (1994).

E.D. Getzoff, K.W. Jones, D. McRee, K. Moffat, K. Ng, M.L. Rivers, W. Schildkamp, P.T. Singer, P. Spanne, R.M. Sweet, T.-Y. Teng, and E.M. Westbrook, "Laue Diffraction Protein Crystallography at the National Synchrotron Light Source", *Nucl. Instrum. and Meth. In Phys. Res.*, **B79**, 249, (1993).

V. Graziano, S.E. Gerchman, A.J. Wonacott, R.M. Sweet, J.R.E. Wells, S.W. White, and V. Ramakrishnan, "Crystallization of the Globular Domain of Histone H5", *J. Mol. Biol.*, **212**, 253, (1990).

M. Harel, G. Kleywegt, R.B.G. Ravelli, I. Silman, and J.L. Sussman, "Crystal Structure of an Acetylcholinesterase-fasciculin Complex: Interaction of a Three-fingered Toxin from Snake Venom with its Target", *Structure*, **3**, 1355, (1995).

P.J. Heath, K. Stephens, R. Monnat, and B.L. Stoddard, "Structure of the I-CreI Intron-Encoded Endonuclease: a Novel Fold that Binds and Cleaves a Long DNA Target Sequence", *Nat. Struct. Bio.*, **4/6**, 468, (1997).

W.-C. Hon, G.A. McKay, P.R. Thompson, R.M. Sweet, D.S.C. Yang, G.D. Wright, and A.M. Berghuis, "Structure of an Enzyme Required for Aminoglycoside Antibiotic Resistance Reveals Homology to Eukaryotic Protein Kinases", *Cell*, **89**, 887-895, (1997).

K.Y. Hwang, H.K. Song, C. Chang, J. Lee, S.Y. Lee, K.K. Kim, S. Choe, R.M. Sweet, and S.W. Suh, "Crystal Structure of Thermostable α -amylase from *Bacillus Licheniformis* Refined at 1.7- \AA Resolution", *Mol. Cells*, **7**, 251, (1997).

S.C. Johnston, C.N. Larsen, W.J. Cook, K.D. Wilkinson, and C.P. Hill, "Crystal Structure of a Deubiquitinating Enzyme (human UCH-L3) at 1.8 \AA Resolution", *EMBO J.*, **16**, 3787-3796, (1997).

A.B. Kiyatkin, P. Natarajan, S. Munshi, W. Minor, J.E. Johnson, and P.S. Low, "Crystallization and Preliminary X-ray Analysis of the Cytoplasmic Domain of Human Erythrocyte Band 3", *Proteins: Structure, Function, and Genetics*, **22**, 293, (1995).

P.D. Kwong, S.-E. Ryu, W.A. Hendrickson, R. Axel, R.M. Sweet, G. Folena-Wasserman, P. Hensley, and R.W. Sweet, "Molecular Characteristics of Recombinant Human CD4 as Deduced from Polymorphic Crystals", Proc. Nat. Acad. Sci. USA, **87**, 6423, (1990).

C.L. Lawson, "An Atomic View of the L-Tryptophan Binding Pocket of trp Repressor", *Nat. Struct. Bio.*, **3**, 986, (1996).

H. Li, J.J. Dunn, B.J. Luft, and C.L. Lawson, "Crystal Structure of Lyme Disease Antigen OspA Complexed with an Fab Fragment", Proc. National Acad. Sci. USA, **94**, 3584, (1997).

H. Li, and C.L. Lawson, "Crystallization and Preliminary X-ray Analysis of *Borrelia burgdorferi* Outer Surface Protein A (OspA) Complexed with a Murine Monoclonal Antibody Fab Fragment", *J. Struct. Bio.*, **115**, 335, (1995).

Y. Lindqvist, W. Huang, G. Schneider, and J. Shanklin, "Crystal Structure of Δ^9 Stearoyl-acyl Carrier Protein Desaturase from Castor Seed and its Relationship to other Di-iron Proteins", *EMBO J.*, **15**, 4081, (1996).

J. Liu, A.G.D. Tse, H.-C. Chang, J.H. Liu, J. Wang, R.E. Hussey, Y. Chishti, B. Rheinhold, R. Spoerl, S.G. Nathenson, J.C. Sacchettini, and E.L. Reinherz, "Crystallization of Deglycosylated T Cell Receptor (TCR) Complexed with an Anti-TCR Fab Fragment", *J. Biol. Chem.*, **271**, 33639, (1996).

M.A. Massiah, D. Worthylake, A.M. Christensen, W.I. Sundquist, C.P. Hill, and M.F. Summers, "Comparison of the NMR and X-ray Structures of the HIV-1 Matrix Protein: Evidence for Conformational Changes During Viral Assembly", *Protein Science*, **5**, 2391-2398, (1996).

A. Mesecar, B.L. Stoddard, and D.E. Koshland, Jr., "Orbital Steering in the Catalytic Power of Enzymes: Small Structural Changes with Large Catalytic Consequences", *Science*, **277**, 202, (1997).

M. O'Gara, S. Klimasauskas, R.J. Roberts, and X. Cheng, "Enzymatic C5-Cytosine Methylation of DNA: Mechanistic Implications of new Crystal Structures for HhaI Methyltransferase-DNA-AdoHcy Complexes", *J. Mol. Biol.*, **261**, 634, (1996).

M. O'Gara, R.J. Roberts, and X. Cheng, "A Structural Basis for the Preferential Binding of Hemimethylated DNA by HhaI DNA Methyltransferase", *J. Mol. Biol.*, **263**, 597, (1996).

V. Ramakrishnan, and S.W. White, "The Structure of Ribosomal Protein S5 Reveals Sites of Interaction with 16S rRNA", *Nature*, **358**, 768, (1992).

M.R. Redinbo, S.M. Eide, R.L. Stone, J.E. Dixon, and T.O. Yeates, "Crystallization and Preliminary Structural Analysis of *Bacillus subtilis* Adenylosuccinate Lyase, an Enzyme Implicated in Infantile Autism", *Prot. Sci.*, **5**, 786, (1996).

W.G. Scott, B.L. Stoddard, and A. Klug, "Capturing Structures of Catalytic RNA Intermediates: The Hammerhead Ribozyme", *Science*, **274**, 2065, (1996).

D. Shin, K. Hwang, K. Kyeong, S. Kim, R. Sweet, and S. Suh, "Crystallization and Preliminary X-ray Crystallographic Analysis of Phospholipid Transfer Protein from Maize Seedlings", *Proteins: Structure, Function, and Genetics*, **19**, 80, (1994).

H. Song, K. Hwang, C. Chang, and S. Suh, "Crystal Structure of *Bacillus licheniformis* α - Amylase at 1.7 \AA Resolution", Enzymes for Carbohydrate Engineering II Symposium, pp. 53-62, (1995).

M.G. Strauss, E.M. Westbrook, I. Naday, T.A. Colemen, M.L. Westbrook, D.J. Travis, R.M. Sweet, J.W. Pflugrath, and M. Stanton, "CCD-Based Detector for Protein Crystallography with Synchrotron X-rays", *Nucl. Instrum. and Meth.*, **A297**, 275, (1990).

R.K. Strong, B.L. Stoddard, A.P. Arrott, and G.K. Farber, "Long Duration Growth of Protein Crystals in Microgravity Aboard the MIR Space Station", *J. Cryst. Growth*, **119**, 200, (1992).

R.M. Sweet, "Review of Handbook on Synchrotron Radiation", Volume 4: Medical, Biological, and Physiological Applications, edited by S. Ebashi, M. Koch, and E. Rubenstein, *Synch. Rad. News*, **6**, 23, (1992).

R.M. Sweet, P.T. Singer, and A. Smalas, "Considerations in the Choice of a Wave-length Range for White-Beam Laue Diffraction", *Acta Cryst.*, **D49**, 305, (1993).

K.S. Thorn, H.E.M. Christensen, R. Shigeta, Jr., D. Huddler, Jr., L. Shalaby, U. Lindberg, N.-H. Chua, and C.E. Schutt, "The Crystal Structure of a Major Allergen from Plants", *Structure*, **5**, 19, (1997).

J. Tsao, M.S. Chapman, H. Wu, M. Agbandje, W. Keller, and M.G. Rossmann, "Structure Determination of Monoclinic Canine Parvovirus", *Acta Cryst.*, **B48**, 75, (1992).

R. Xu, G. Carmel, J. Kuret, and X. Cheng, "Structural Basis for Selectivity of the Iso-quinoline Sulfonamide Family of Protein Kinase Inhibitors", *Proc. Natl. Acad. Sci. U.S.A.*, **93**, 6308, (1996).

R. Xu, L. Jokhan, X. Cheng, A. Mayeda, and A.R. Krainer, "Crystal Structure of Human UP1, the Domain of HnRNP A1 that Contains Two RNA-Recognition Motifs", *Structure*, **5**, 559, (1997).

R. Xu, C. Koch, Y. Liu, J.R. Horton, D Knapp, K. Nasmyth, and X. Cheng, "Crystal Structure of the DNA-Binding Domain of Mbp1, a Transcription Factor Important in Cell Cycle Control of DNA Synthesis", *Structure*, **5**, 349, (1997).

Beamline X13

K. Bane, and S. Krinsky, "Impedance of a Small Gap Undulator Chamber", Proceedings Particle Accelerator Conference, p. 3375, (1993).

A. Friedman, X. Zhang, S. Krinsky, E. Blum, and K. Halbach, "Polarized Wiggler for the NSLS X-ray Ring", Proceedings Particle Accelerator Conference, p. 1599, (1993).

E. Gluskin, I. McNulty, L. Yang, K.J. Randall, Z. Xu, and E.D. Johnson, "Intensity Interferometry at the X13A Undulator Beamline", *Nucl. Instrum. and Meth.*, **A347**, 177, (1994).

E.D. Johnson, and T. Oversluizen, "UHV Photoelectron X-ray Beam Position Monitor", *Nucl. Instrum. and Meths.*, **A291**, 427, (1990).

K.M. Kemner, V.G. Harris, V. Chakarian, Y.U. Idzerda, W.T. Elam, C.-C. Kao, Y.C. Feng, D.E. Laughlin, and J.C. Woicik, "The Role of Ta and Pt in Segregation Within Co-Cr-Ta and Co-Cr-Pt Thin Film Magnetic Recording Media", *J. Appl. Phys.*, **79**, 5345, (1996).

K. M. Kemner, Y. U. Idzerda, V. G. Harris, V. Chakarian, W. T. Elam, C. -C. Kao, E. Johnson, Y. C. Feng, D. E. Laughlin, C. T. Chen, K. -K. Lee, and J. C. Lodder, "Direct Observation of Cr Magnetic Order in CoCrTa and CoCrPt Thin Films", *Rapid Comm. J. App. Phys.*, **81**, 1002, (1997).

T. Oversluizen, W. Stoeber, and E.D. Johnson, "Kinematic Mounting Systems for NSLS Beamlines and Experiments", *Rev. Sci. Instrum.*, **63**, 1285, (1992).

K.J. Randall, Z. Xu, E. Gluskin, I. McNulty, R. Dejus, S. Krinsky, O. Singh, C.C. Kao, E.D. Johnson, C.T. Chen, and G. Meigs, "Characterization of a Novel Elliptically Polarized Wiggler", *J. of Electron Spectroscopy and Related Phenomena*, **80**, 433, (1996).

P.M. Stefan, L. Solomon, S. Krinsky, and G. Rakowsky, "NSLS Prototype Small Gap Undulator", Proceedings Particle Accelerator Conference, p. 1096, (1991).

Z. Yin, L. Berman, S. Dierker, E. Dufresne, and D.P. Siddons, "A Simple X-ray Focusing Mirror using Float Glass", *SPIE*, **2856**, 307, (1997).

Beamline X14A

M.K. Durbin, A. Malik, A.G. Richter, R. Ghaskadvi, T. Gog, and P. Dutta, "Transitions to a new Chiral Phase in Fatty Acid Langmuir Monolayer", *J. Chem. Phys.*, **106**, 8216, (1997).

A. Goyal, M. Paranthaman, Q. He, F.A. List, E.D. Specht, D.K. Christen, D.M. Kroeger, J.E. Tkaczyk, and P. Haldar, "Fabrication, Processing, and Properties of Tl-1223 Conductors", *IEEE Trans.in Appl.Superconductivity*, **5**, 1405, (1995).

H. Hong, R.D. Aburano, K.-S. Chung, D.-S. Lin, E.S. Hirschorn, T.-C. Chiang, and H. Chen, "X-ray Truncation Rod Study of Ge(001) Surface Roughening by Molecular Beam Homoepitaxial Growth", *J. Appl. Phys.*, **79**, 6858, (1996).

S.C. Moss, J.L. Robertson, D.A. Neumann, and L. Reinhard, "Anomalous Static Displacements and their Relation to Lattice Dynamics in $\text{Fe}_{0.53}\text{Cr}_{0.47}$ ", *Comp. Mat. Sci.*, **8**, 33, (1997).

J.E. Tkaczyk, J.A. Sutliff, J.A. DeLuca, P.J. Bednarczyk, C.L. Briant, Z.L. Wang, A. Goyal, D.M. Kroeger, D.H. Lowndes, and E.D. Specht, "Texture and Transport in Spray Pyrolyzed $\text{TlBa}_2\text{Ca}_2\text{Cu}_3\text{O}_9$ Thick Films", *J. Mater. Res.*, **10**, 2203, (1995).

P. Wochner, E. Isaacs, S.C. Moss, P. Zschack, J. Giapintzakis and D.M. Ginsberg, "X-ray Search for CDW in Single Crystal $\text{Yba}_2\text{Cu}_3\text{O}_{7-\delta}$ ", Proceedings 10th Anniversary HTS Workshop, Houston TX, World Scientific, p. 425, (1996).

Beamline X15A

M. Bohringer, Q.D. Jiang, R. Berndt, W.D. Schneider, and J. Zegenhagen, "Discommensurations, Epitaxial Growth and Island Formation in Ge(111):Cu", *Surf. Sci.*, **367**, 245, (1996).

L. Cheng, P. Lyman, N.C. Sturchio, and M.J. Bedzyk, "Adsorption and Structure of Selenite Anions on the Calcite (104) Surface", *Surf. Sci.*, **382**, 690, (1997).

R.E. Johnston, D. Washburn, E. Pisano, C. Burns, W.C. Thomlinson, L.D. Chapman, F. Artelli, N.F. Gmür, Z. Zhong, and D. Sayers, "Mammography Phantom Studies with Synchrotron Radiation", *Radiology*, **200**, 659, (1996).

B.H. Lester, W.C. Thomlinson, and R.G. Fairchild, "Photon Activation of Iododeoxyuridine: Biological Efficacy of Auger Electrons", *Radiation Research*, **133**, 219, (1993).

B.H. Lester, W. Thomlinson, J. Kalef-Ezra, V. Benary, E.A. Popenone, V.P. Bond, C. Gordon, L Warkentien, N. Gmür, N. Lazarz, and R.F. Fairchild, "The Biological Efficacy of an Induced Auger Effect: Comparison of Iodine and Bromine as Target Atoms", Biophysical Aspects of Auger Processes, edited by R.W. Howell, V.R. Narra, K.S.R. Sastry, and D.V. Rao, *AAPM Symposium Series*, **8**, 91, (1992).

T.-L. Lee, Y. Qain, P.F. Lyman, J.C. Woicik, J.G. Pellegrino, and M.J. Bedzyk, "The Use of X-ray Standing Waves and Evanescent-Wave Emission to Study Buried Strained-Layer Heterostructures", *Physica*, **B221**, 437, (1996).

W. Lin, T.-L. Lee, P.F. Lyman, J. Lee, M.J. Bedzyk, and T.J. Marks, "Atomic Resolution X-ray Standing Wave Microstructural Characterization of NLO-Active Self-Assembled Chromophoric Superlattices", *J. Am. Chem. Soc.*, **119**, 2205, (1997).

P.F. Lyman, and M.J. Bedzyk, "Local Structure of Sn/Si(001) Surface Phases", *Surf. Sci.*, **371**, 307, (1997).

P.F. Lyman, and M.J. Bedzyk, "Surfactant-Mediated Epitaxy of Metastable SnGe Alloys", *Appl. Phys. Lett.*, **69**, 978, (1996).

Y. Qian, M.J. Bedzyk, P.F. Lyman, T.-L. Lee, S. Tang, and A.J. Freeman, "Structure and Surface Kinetics of Bismuth Adsorption on Si(001)", *Phys. Rev.*, **B54**, 4424, (1996).

Y. Qian, N.C. Sturchio, R.P. Chiarello, P.F. Lyman, T.-L. Lee, and M.J. Bedzyk, "Lattice Location of Trace Elements within Minerals and at their Surfaces with X-ray Standing Waves", *Science*, **265**, 1555, (1994).

N.C. Sturchio, R. P. Chiarello, L. Cheng, P. F. Lyman, M. J. Bedzyk, Y. Qian, H. You, D. Yee, P. Geissbuhler, L. Sorensen, Y. Liang, and D. Baer, "Lead Adsorption at the Calcite-Water Interface: Synchrotron X-ray Standing Wave and X-ray Reflectivity Studies", *Geochimica et Cosmochimica Acta*, **61**, 251-264, (1997).

Beamline X15B

T. Laine, K. Saarinen, J. Makinen, P. Hautojarvi, C. Corbel, L.N. Pfeiffer, and P.H. Citrin, "Observation of Compensating Ga Vacancies in Highly Si-Doped GaAs", *Phys. Rev.*, **B54**, 11050, (1996).

L. Niu, A.R. Kortan, N. Kopylov, and P.H. Citrin, "Local Atomic and Electronic Structure of Heavy-Metal Fluoride ZBLAN Glasses", Optoelectronic Materials: Ordering, Composition Modulation, and Self-Assembled Structures, edited by E.D. Jones, A. Mascarenhas, and P. Petroff, MRS Symposia Proceedings, *Mat. Res. Soc.*, **417**, 175, (1996).

L. Niu, A.R. Kortan, N. Kopylov, and P.H. Citrin, "Local Structure Study of Pb-Induced Instability in ZBLAN Glass", *J. Non-Cryst. Solids*, **213**, 358, (1997).

Beamline X16A

J. Braun, J.P. Toennies, and G. White, "A SPALEED Structural Study of Cesium Adsorption on Stepped Copper Surfaces Cu(211) and Cu(511)", *Surf. Sci.*, **340**, 265-280, (1995).

S. Cundiff, W.H. Knox, F.H. Baumann, K. Evans-Lutterodt, M.T. Tang, M.L. Green, and H.M. van Driel, "Si/SiO₂ Interface Roughness: Comparison Between Second Harmonic Generation and X-ray Scattering", *Appl. Phys. Letts.*, **70**, 1414, (1997).

R. Felici, I.K. Robinson, C. Ottaviani, P. Imperatori, P. Eng, and P. Perfetti, "The Si(001) 2pl Reconstruction Solved by X-ray Diffraction", *Surf. Sci. Letts.*, **375**, 55, (1997).

H.L. Meyerheim, S. Pflanz, R. Schuster, and I.K. Robinson, "Surface X-ray Diffraction on Clean and Cs-Covered Ag(001)", *Z. Krist. Lett.*, **212**, 327, (1997).

H.L. Meyerheim, I.K. Robinson, and R. Schuster, "Temperature-Dependent Surface X-ray Diffraction on K/Ag(001)-(2x1)", *Surf. Sci.*, **370**, 268, (1997).

H. Reichert, P.J. Eng, H. Dosch, and I.K. Robinson, "Surface-Induced Giant Anisotropy in the Order Parameter Relaxation at Cu₃Au(001)", *Phys. Rev. Letts.*, **78**, 3475, (1997).

R. Schuster, and I.K. Robinson, "Reconstruction-Induced Compression of the Cu(110) Surface - Reply to Comment", *Phys. Rev. Letts.*, **78**, 159, (1997).

Beamline X16B

C. A. Burns, and E. D. Isaacs, "Debye-Waller Factor in Solid He-4 Crystals", *Phys. Rev.*, **B55**, 5767, (1997).

Beamline X17B2

F.A. Dilmanian, X.Y. Wu, E.C. Parsons, B. Ren, J. Kress, T.M. Button, L.D. Chapman, J.A. Coderre, F. Giron, D. Greenberg, D.J. Krus, Z. Liang, S. Marcovici, M.J. Petersen, C.T. Roque, M. Shleifer, D.N. Slatkin, W.C. Thomlinson, K. Yamamoto, and Z. Zhong, "Single-and Dual-Energy CT with Monochromatic Synchrotron X-rays", *Phys. Med. Biol.*, **42**, 371, (1997), BNL 62821.

R.H. Menk, W. Thomlinson, N. Gmür, Z. Zhong, D. Chapman, F. Arfelli, W.R. Dix, W. Graeff, M. Lohmann, G. Illing, L. Schildwächter, B. Reime, W. Kupper, C. Hamm, J.C. Giacomini, H.J. Gordon, E. Rubenstein, J. Dervan, H.J. Besch, and A.H. Walenta, "The Concept of Spatial Frequency Depending DQE and its Application to a Comparsion of Two Detectors used in Transvenous Coronary Angiography", *Nucl. Instrum. Meth.*, **398**, 351-367, (1997).

Z. Zhong, Bent Laue Crystal Monochromator for Producing Areal X-ray Beams, PhD., State University of New York, Stony Brook, (1996).

Z. Zhong, D. Chapman, R. Menk, J. Richardson, S. Theophanis, and W. Thomlinson, "Monochromatic Energy Subtraction Radiography using a Rotating Anode Source and a Bent Laue Monochromator", *Phys. Med. Biol.*, **42/9**, 1751, (1997). BNL 64155.

Z. Zhong, D. Chapman, W. Thomlinson, F. Arfelli, and R. Menk, "A Bent-Laue Crystal Monochromator for Monochromatic Radiography with an Area Beam", *Nucl. Instrum. and Meth. in Phys. Res.*, **399**, 489, (1997), BNL 64154.

Beamline X17C

S. Beaver, J. Liu, and Y. K. Vohra, "Phase Transformations in Mo-Ru Alloy Induced by Laser Heating at High Pressures", *J. Phys. Cond. Mat.*, **8**, L647, (1996).

F.P. Bundy, W.A. Bassett, M.S. Weathers, R.J. Hemley, H.K. Mao, and A.F. Goncharov, "Review Article The Pressure-Temperature Phase and Transformation Diagram for Carbon; Updated Through 1994", *Carbon*, **34**, 141, (1996).

L.S. Dubrovinsky, S.K. Saxena, and P. Lazor, "X-ray Study of Iron with *in situ* Heating at Ultra High Pressures", *Geophys. Res. Lett.*, **24**, 1835, (1997).

L.S. Dubrovinsky, S.K. Saxena, P. Lazor, R. Ahuja, O. Eriksson, J.M. Wills, and B. Johansson, "Experimental and Theoretical Identification of a New High Pressure Phase of Silica", *Nature*, **388**, 362, (1997).

T.S. Duffy, Y. Wang, P.J. Eng, S.R. Sutton, and M.L. Rivers, "Development of a High-Pressure Facility at the Advanced Photon Source", German-Japanese Workshop on the use of Ultra-Short Wavelength Photons and Gamma Rays for High-Precision, High-Resolution Analysis of Electronic States of Solids, pp. 12-15, (1996).

A.F. Goncharov, M. Somayazulu, V.V. Struzhkin, R.J. Hemley, and H.K. Mao, "New High-Pressure Low-Temperature Phase of Methane", Fifteenth International Conference on Raman Spectroscopy, edited by S.A. Asher, and P. Stein, pp. 1042-1043, (1996).

A.F. Goncharov, V.V. Struzhkin, M. Somayazulu, R.J. Hemley, and H.K. Mao, "Compression of Ice to 210 GPa: Evidence for a Symmetric Hydrogen Bonded Phase", *Science*, **273**, 218, (1996).

R.J. Hemley, and H.K. Mao, "Static High-Pressure Effects in Solids", *Encyclopedia of Appl. Phys.*, **18**, 555, (1997).

R.J. Hemley, H.K. Mao, A.F. Goncharov, M. Hanfland, and V.V. Struzhkin, "Synchrotron Infrared Spectroscopy to 0.15 eV of H_2 and D_2 at Megabar Pressures", *Phys. Rev. Lett.*, **76**, 1667-1670, (1996).

R.J. Hemley, H.K. Mao, G. Shen, J. Badro, P. Gillet, M. Hanfland, and D. Häusermann, "X-ray Imaging of Stress and Strain of Diamond, Iron, and Tungsten at Megabar Pressures", *Science*, **276**, 1242, (1997).

H. Hua, S. Mirov, and Y. K. Vohra, "High-Pressure and High-Temperature Studies on Oxide Garnets", *Phys. Rev.*, **B54**, 6200, (1996).

E. Huang, A. Li, J. Xu, R. Chen, and T. Yamanaka, "High-Pressure Phase Transition in $Al(OH)_3$: Raman and X-ray Observations", *Geophys. Res. Lett.*, **23**, 3083, (1996).

M.B. Kruger, and C. Meade, "High Pressure Structural Study of GeI4", *Phys. Rev.*, **B55**, 1, (1997).

M.B. Kruger, J.H. Nguyen, W. Caldwell, and R. Jeanloz, "Equation of State of $MgAl_2O_4$ Spinel to 65 GPa", *Phys. Rev.*, **B56**, 1, (1996).

M.B. Kruger, J.H. Nguyen, Y.M. Li, W. Caldwell, M.H. Manghnani, and R. Jeanloz, "Equation of State of $\alpha-Si_3N_4$ ", *Phys. Rev.*, **B55**, 3456, (1996).

Y.M. Li, M.B. Kruger, J.H. Nguyen, W.A. Caldwell, and R. Jealoz, "High Pressure X-ray Diffraction Study of $\beta-Si_3N_4$ ", *Solid State Comm.*, **103**, 107, (1997).

P. Loubeyre, R. LeToullec, D. Häusermann, M. Hanfland, R.J. Hemley, H.K. Mao, and L.W. Finger, "X-ray Diffraction and Equation of State of Hydrogen at Megabar Pressures", *Nature*, **383**, 702, (1996).

H.K. Mao, and R.J. Hemley, "Solid Hydrogen at Ultrahigh Pressures", High Pressure Science & Technology-Proceedings of the Joint XV AIRAPT & XXXIII EHPRG International Conference, edited by W.A. Trzeciakowski, pp. 505-510, (1996).

H.K. Mao, J. Shu, Y. Fei, H. Hu, and R.J. Hemley, "The Wüstite Enigma", *Phys. Earth Planet. Inter.*, **96**, 135, (1996).

J.H. Nguyen, M.B. Kruger, and R. Jealoz, "Evidence for 'Partial' (Sublattice Amorphization in $Co(OH)_2$ ", *Phys. Rev. Lett.*, **78**, 1936, (1997).

S.K. Saxena, L.S. Dubrovinsky, C.S. Yoo, J. Akella, A.J. Campbell, H.K. Mao, and R.J. Hemley, "Detecting Phases of Iron", *Science*, **275**, 94, (1997).

S.K. Saxena, L.S. Dubrovinsky, and P. Haggkvist, "X-ray Evidence for the β -iron at High Temperature and High Pressure", *Geophys. Res. Lett.*, **23**, 2441, (1996).

S.K. Saxena, L.S. Dubrovinsky, P. Lazor, Y. Cerenius, P. Häggkvist, M. Hanfland, and J.Z. Hu, "Stability of Perovskite ($MgSiO_3$) in the Earth's Mantle", *Science*, **274**, 1357, (1996).

W.L. Vos, L.W. Finger, R.J. Hemley, and H.K. Mao, "Pressure Dependence of Hydrogen Bonding in a Novel H_2O-H_2 Clathrate", *Chem. Phys. Lett.*, **257**, 524, (1996).

C.S. Yoo, J. Akella, H. Cynn, and M. Nicol, "Direct Elementary Reactions of Boron and Nitrogen at High Pressures and Temperatures", *Phys. Rev.*, **B56**, 1, (1997).

C.S.Yoo, P. Soderlind, J. Moriarty, and A. Campbell, "Dhcp as a Possible new ϵ' -Phase of Iron at High Pressures and Temperatures", *Phys. Lett.*, **A214**, 65, (1996).

Beamline X18A

J. Anderson, Atomic Short-Range Order Determination in Au-25at.%Fe and Ni-12.5at.%Si: A Synchrotron X-ray Diffuse Scattering Study, Ph.D., LTV Steel, Cleveland, OH., (1996).

T.E. Burns, Asymmetric Adsorbate and Substrate Interactions in Physisorbed Systems: Nitrogen on Graphite and Dipolar Molecules on Ionic Substrates, Ph.D., Utah State University, (1994).

J. R. Buschert, Time Resolved X-Ray Diffraction Studies of Laser Annealing and Photostriction in Silicon, Ph.D., Faculty Goshen College, (1989).

M.A. Castro, The Pair-Breaking Problem in High Temperature Superconductors: A Study of Magnetic and Nonisovalent Impurities in Yttrium Barium Copper Oxide, Ph.D., Purdue University, (1993).

P. Dai, Synchrotron X-Ray Diffraction Study of Structure and Growth of Adsorbed Layers, Ph.D., Oak Ridge National Laboratory, (1993).

R. Eisenhower, Multiple Bragg Scattering in Decagonal Quasicrystals, Ph.D., NSLS, Brookhaven National Laboratory, (1996).

G.C. Follis, A Novel Theoretical Technique for Quantitative Analysis of X-Ray Diffraction Data, Ph.D., Purdue University, (1993).

R. Goldman, Structural and Electronic Properties of Lattice-Matched Compound Semiconductor Heterostructures, Ph.D., University of Michigan, (1995).

R. S. Goldman, K. L. Kavanagh, H. H. Wieder, V. M. Robbins, S. N. Ehrlich, and R.M. Feenstra, "Correlation of Buffer Strain Relaxation Modes with Transport Properties of Two-Dimensional Electron Gases", *J. Appl. Phys.*, **80**, 6849, (1996).

R. S. Goldman, K. L. Kavanagh, H. H. Wieder, and S. N. Ehrlich, "Modulation-Doped InGaAs/InAlAs Heterostructures Grown on GaAs Substrates Using Step-Graded InGaAs Buffers", *J. Vac. Sci. Tech.*, **B14**, 3035, (1996).

F. Y. Hansen, L. W. Bruch, and H. Taub, "Molecular Dynamics Simulations of the Dynamical Excitations in Commensurate Submonolayer Films of Nitrogen Molecules on Graphite", *Phys. Rev.*, **B54**, 14077, (1996).

S.A. Hoffman, Testing the Response of High Temperature Superconductors to the Presence of Spins: Nickel, Zinc, and Gallium Substitutions in Yttrium Barium Copper Oxide, Ph.D., Purdue University, (1991).

K. Hongladarom, Molecular Orientation and Rheology of Liquid Crystalline Polymers under Shear Flow, Ph.D., Staff GE Plastics on assignment in France, (1995).

J.M. Honig, S.N. Ehrlich, T.P. Hogan, C.R. Kannewurf, G.L. Liedl, T.F. Rosenbaum, J. Spalek, P. Somasundaram, and X. Yao, "Physical Properties of the $\text{NiS}_{2-x}\text{Se}_x$ System: From Mott Insulator to Paramagnetic Metal", MRS Proceedings, **453**, 291, (1997).

H. Lee, Phase Determination by Multiple Bragg Scattering of X-Rays in an Icosahedral Quasicrystal, Ph.D., University of California at San Diego, (1993).

V. Mahadev, Early Stages of Delta-Prime Precipitation in a Binary Aluminum-Lithium Alloy, M.S., University of Arizona, (1990).

V. Mahadev, Structural Characterization of Pseudo-Insulators for Gallium Arsenide Devices, Ph.D., University of Arizona, (1995).

K. Mahalingam, Precipitation Behavior of δ' (Al_3Li) in a Binary Alumnum Lithium Alloy, Ph.D., Staff Wright Patterson AFB, Dayton, Ohio, (1989).

P. Miller, and K. J. Bowman, "The Relation of Contact and Toughness in Textured Silicon Nitride to Preferred Orientation," Proceedings of the Eleventh International Conference on Textures of Materials, pp.1009-1014, (1996).

J. C. Newton, and H. Taub, "Neutron Diffraction Investigation of the S_2 Monolayer Phase of Ethane Physisorbed on Graphite", *Surf. Sci.* **364**, 273, (1996).

E. Smela, The Effect of Substrate Topology on Smectic Liquid Crystal Alignment: A High Resolution X-ray Diffraction Study, Ph.D., Likoping Institute of Technology, (1992).

N. Takesue, Thermal Diffuse Scattering and Impurity Effect on the Para-To-Ferroelectric Transitions of PbTiO_3 and BaTiO_3 , Ph.D., Institute of Solid State Physics, University of Tokyo, Japan, (1996).

V. M. Ugaz, D. K. Cinader, Jr. and W. R. Burghardt, "Origins of Region I Shear Thinning in Model Lyotropic Liquid Crystalline Polymers", *Macromolecules* **30**, 1527, (1997).

C. Venkatraman, Structural Characterization and Resistivity Variation of Lanthanum Nickelates, M.S., Advanced Refractories Technology, Buffalo, NY, (1990),

C. Venkatraman, Texture Development in YBCO Films Synthesized from Metallo-Organic Precursors, Ph.D., Advanced Refractories Technology, Buffalo, NY, (1994).

S.-K. Wang, Diffraction Studies of the Multilayer Structure Simple Physisorbed Films, Ph.D, Self-employed, (1992).

S.M. Williams, In Situ X-Ray Studies of Oxide Thin Films and Multilayers, Ph.D., University of Illinois-Chicago, (1994).

Z. Wu, Diffraction Studies of the Structure and Growth of Films Adsorbed on the Ag(111) Surface, Ph.D., University of Illinois, Urbana-Champaign, (1997).

Z. Wu, B. Matthies, K. W. Herwig, H. Taub, and S. N. Ehrlich , "Quasiepitaxial Growth of n-Butane on a Ag(111) Surface", *Bull. Am. Phys. Soc.* **42**, 309, (1997).

Y. Zhang, X-Ray Diffraction Studies of Al-Pd-Mn Quasicrystal. Structural and Thermal Properties, Ph.D., Qualcomm Inc., San Diego, California, (1997).

Beamline X18B

C.J. Dodge, and A.J. Francis, "Biotransformation of Binary and Ternary Citric Acid Complexes of Iron and Uranium", *Environ. Sci. Technol.* **31**, 3062, (1997).

C.J. Dodge, A.J. Francis, and C.R. Clayton, "X-ray Spectroscopic Studies of Uranium Transformations in Microbial Cultures", In Synchrotron Radiation Techniques in Industrial, Chemical, and Materials Science, Edited by L.J. Terminello, K.L. D'Amico, and D.K. Shuh, Plenum Publishing Co., pp. 159-168, (1996).

E.J. Doskocil, S.V. Bordawekar, and R.J. Davis, "Alkali-Support Interactions on Rubidium Base Catalysts Determined by XANES, EXAFS, CO₂ Adsorption, and IR Spectroscopy", *J. Catal.*, **169**, 327-337, (1997).

X. Feng, G. E. Fryxell, L.-Q. Wang, A. Y. Kim, J. Liu, and K. M. Kemner, "Functionalized Monolayers on Ordered Mesoporous Supports (SAMMS)", *Science*, **276**, 923, (1997).

C. C. Freyhardt, R. F. Lobo, S. Khodabandeh, J. E. Lewis, Jr., M. Tsapatsis, M. Yoshikawa, M. A. Camblor, M. Pan, M.M. Helmkamp, S. I. Zones, and M. E. Davis, "VPI-8: A High-Silica Molecular Sieve with a Novel "Pinwheel" Building Unit and Its Implications for the Synthesis of Extra-Large Pore Molecular Sieves", *J. Am. Chem. Soc.*, **118/31**, 7299-7310, (1996).

G. Larson, E. Lotero, L.M. Petkovic, and D.S. Shobe, "Alcohol Dehydration Reactions over Tungstated Zirconia Catalysts", *J. of Catal.*, **169**, 67-75, (1997).

D. E. Resasco, W. E. Alvarez, A. Ali and C. J. Loughran, "Selective Reduction of NO_x with Methane on Zeolite Catalysts", Proc. 15th Iberoamer. Symposium on Catalysis, (Plenary Lecture), Cordoba, Argentina, pp. 59-74, (1996).

Beamline X19A

K. Chae, Y. Lee, C. Whang, Y. Jeon, B. Choi, and M. Croft, "Charge Redistribution in Ion-Beam-Mixed Pd-Ag Alloys", *Nucl. Instrum. and Meths. In Phys. Res.*, **B117**, 123, (1996).

M. Croft, D. Sills, M. Greenblatt, C. Lee, S.-W. Cheong, K.V. Ramanujachary, and D. Tran, "Systematic Mn-d Configuration Change in the La_{1-x}Ca_xMnO₃ System: A Mn-K Edge XAS Study", *Phys. Rev.*, **B55**, 8726, (1997).

E. Fujita, L.R. Furenlid, and M.W. Renner, "Direct XANES Evidence for Charge Transfer in Co - CO₂ Complexes", *J. of the Am. Chem. Soc.*, **119**, 4549, (1997).

J. L. Fulton, D.M. Pfund, and Y. Ma, "A Diamond-Window XAFS Cell for Studies of High-Temperature, High-Pressure, Aqueous Solutions", *Rev. Sci Instrum.*, **67**, 1-5, CD-ROM Issue, (1996).

J. L. Fulton, D. M. Pfund, S. L. Wallen, M. Newville, E. A. Stern, and Y. Ma, "Rubidium Ion Hydration in Ambient and Supercritical Water", *J. Chem. Phys.*, **105**, 2161, (1996).

L.R. Furenlid, A. Mayer, and J.P. Kirkland, "NSLS-DAC: A Beamline Control and Data Acquisition Package", *J. de Phys.*, **C2/7**, 335, (1997).

F. E. Huggins, and G. P. Huffman, "Application of XAFS Spectroscopy to Coal Geochemistry", - Mineral Spectroscopy: A Tribute to Roger G. Burns, edited by M. D. Dyar, C. A. McCammon, and M. W. Schaefer, *The Geochem. Soc.*, **5**, 133, (1996).

F. E. Huggins, and G. P. Huffman, "Modes of Occurrence of Trace Elements in Coal from XAFS Spectroscopy", *Int. J. Coal Geol.*, **32**, 31, (1996).

F.E. Huggins, G.P. Huffman, G.E. Dunham, and C.L. Senior, "XAFS Examination of Mercury Capture on Three Activated Carbons", *ACS Div. Fuel Chem.*, **42/4**, 118, (1997).

F.E. Huggins, S. Srikantapura, B.K. Parekh, L. Blanchard, and J.D. Robertson, "XANES Spectroscopic Characterization of Selected Elements in Deep-Cleaned Fractions of Kentucky #9 Coal", *Energy & Fuels*, **11**, 691, (1997).

F. E. Huggins, J. Zhao, N. Shah, F. Lu, G. P. Huffman, L. E. Bool, III, and C. L. Senior, "Investigation of the Oxidation of Arsenical Pyrite in Coal and its Effect on the Behavior of Arsenic During Combustion", Proceedings, ICCS '97, 9th International Conference on Coal Science, edited by A. Ziegler, K.H. van Heek, J. Klein, and W. Wanzl, *P&W Druck and Verlag Essen*, 1, 381, (1997).

G. Liang, H. Xi, E. Roberts, T. Binford, K. Mochizuki, J. Markert, and M. Croft, "Lattice, Ce-L₃ Valence, Transport, and Magnetic Results on Mixex-Valent/Kondo System Ce_{1-x}La_xMn₂Si₂", *J. Appl. Phys.*, **81**, 4924, (1997).

B. J. Palmer, D. M. Pfund, and J. L. Fulton, "Direct Modeling of XAFS Spectra from Molecular Dynamics Simulations", *J. Phys. Chem.*, **100**, 13393, (1996).

J. E. Penner-Hahn, P. J. Riggs-Gelasco, E. Yu, P. DeMarois, and C. F. Yocom, "Structural Characterization of the Manganese Cluster in the Photosynthetic Oxygen Evolving Complex Using X-Ray Absorption Spectroscopy", Photosynthesis: from Light to Biosphere, Vol. II, edited by P. Mathis, Kluwer Academic Publishers, Dordrecht, pp. 214-246, (1996).

A. Pullia, L. Furenlid, H.W. Kraner, G. Bertuccio, P.J. Pietraski, and D.P. Siddons, "High-Resolution Multi-Element Solid State Detectors", *Rev. Sci. Instrum.*, **67/9**, 1, (1996).

M.W. Renner, L.R. Furenlid, K.M. Barkigia, and J. Fajer, "XAFS and Crystallographic Studies of Ni(II) Porphyrins in Single Crystals and Solution", *J. de Phys.*, **C2/7**, 661, (1997).

P.J. Riggs-Gelasco, R. Mei, C.F. Yocom, and J.E. Penner-Hahn, "Reduced Derivatives of the Mn Cluster in the Oxygen Evolving Complex of Photosystem II: An EXAFS Study", *J. Am. Chem. Soc.*, **118**, 2387, (1996).

P. Schmuki, S. Virtanen, H. S. Isaacs, A. J. Davenport, H. Böhni, and T. Stenberg, "In situ XANES Studies on the Electrochemical Behavior of Thin (Fe,Cr)-Oxide Films used as Models for Passive Films", Surface Oxide Films, edited by J. Bardwell, *The Electrochemical Soc.*, **96/18**, 234, (1996).

A. Simopoulos, D. Devlin, A. Kostis, A. Jankowski, M. Croft, and T. Tsakalakos, "Structure and Enhanced Magnetization in Fe/Pt Multilayers", *Phys. Rev.*, **B54**, 9931, (1996).

T.L. Stemmler, T.M. Sossong Jr., J.I. Goldstein, D.E. Ash, T.E. Elgren, D.M. Kurtz Jr., and J.E. Penner-Hahn, "EXAFS Comparison of the Dimanganese Core Structures of Mn Catalase, Arginase and Mn-Substituted Ribonucleotide Reductase and Hemerythrin", *Biochemistry*, **36**, 9847, (1997).

David L. Tierney, XAS Characterization of Bacterial Superoxide Dismutase and NMR Characterization of Substrate Binding in Phthalate Dioxygenase, Ph.D. Thesis, University of Michigan, (1996).

S. L. Wallen, D. M. Pfund, J. L. Fulton, C. R. Yonker, M. Newville, and Y. Ma, "A High-Pressure, Capillary XAFS Cell for Studies of Liquids and Supercritical Fluid Solutions", *Rev. Sci Instrum.*, **67**, 2843, (1996).

T. Yamamoto, M. Croft, R. Shull, and H. Hahn, "Phase Identification of a Superparamagnetic Iron-Oxide/Silver Nanocomposite", *J. Nano. Mat.*, **6**, 965, (1995).

Beamline X19C

H. Chung, W. Si, M. Dudley, A. Anselmo, D.F. Bliss, A. Maniatty, H. Zhang, and V. Prasad, "Characterization of Structural Defects in MLEK Grown InP Single Crystals using Synchrotron White Beam X-ray Topography", *J. Crystal Growth*, **174**, 230, (1997).

M. Dudley, W. Si, S. Wang, C.H. Carter, Jr., R. Glass, and V.F. Tsvetkov, "Quantitative Analysis of Screw Dislocations in 6H-SiC Single Crystals", *Il Nuovo Cimento*, **19D**, 153, (1997).

X. Hu, I. Baker, and M. Dudley, "Temperature Dependence of Dislocations in Notched Ice Crystals", *J. Phys. Chem.*, **B101**, 6102, (1997).

N. Lei, A. Huang, and S.A. Rice, "Structure of the Liquid-Vapor Interface of a Sn:Ga Alloy", *J. Chem. Phys.*, **107**, 4051, (1997).

N. Lei, A. Huang, S.A. Rice, and C.J. Grayce, "In-Plane Structure of the Liquid-Vapor Interfaces of Dilute Bismuth:Gallium Alloys: X-ray Scattering Studies", *J. Chem. Phys.*, **105**, 9615, (1996).

B.M. Park, S.J. Chung, H.S. Kim, W. Si, and M. Dudley, "Synchrotron White Beam X-ray Topography of Ferroelectric Domains in BaTiO₃ Single Crystal", *Phil. Mag.*, **A75**, 611, (1997).

D.R. Rhiger, S. Sen, J.M. Peterson, H. Chung, and M. Dudley, "Lattice Mismatch Induced Morphological Features and Strain in HgCdTe Epilayers on CdZnTe Substrates", *J. Elect. Mat.*, **26**, 515, (1997).

M.L. Schlossman, "Surfaces and Interfaces of Fluids, Structure of", *Encyclopedia of Appl. Phys.*, **20**, 311, (1997).

W. Si, M. Dudley, R. Glass, V. Tsvetkov, and C.H. Carter, Jr., "Hollow-Core Screw Dislocations in 6H-SiC Single Crystals: a Test of Frank's Theory", *J. Elect. Mat.*, **26**, 128, (1997).

W. Si, M. Dudley, H.S. Kong, J. Sumakeris, and C.H. Carter, Jr., "Investigations of 3C-SiC Inclusions in 4H-SiC Epitaxial Films Grown on 4H-SiC Single Crystal Substrates", *J. Elect. Mat.*, **26**, 1, (1997).

W.M. Vetter, and M. Dudley, "X-ray Topography of a Single Superscrew Dislocation in 6H-SiC", Defects in Electronic Materials II, edited by J. Michel, T. Kennedy, K. Wada, and K. Thonke, Mat. Res. Soc. Symp. Proc., **422**, 661, (1997).

Beamline X20A

L.J. Buller, Electrochemical and X-ray Studies of the Structure and Dynamics of Deposition of Metal Monolayers, Thesis, Cornell University, (1997).

Q. Feng, Q.J. Harris, R.J. Birgeneau, and J.P. Hill, "Neutron and X-ray Scattering Studies of Field-cooled Ordering in the Three-dimensional Random Field Ising Model", *Phys. Rev.*, **B55**, 370, (1997).

A.C. Finnefrock, L.J. Buller, K.L. Ringland, P.D. Ting, H.D. Abruna, and J.D. Brock, "Time-Resolved Measurements of Overlayer Ordering in Electrodeposition", *Mat. Res. Soc. Proc.*, **451**, 49, (1997).

J.P. Hill, Q. Feng, Q.J. Harris, R.J. Birgeneau, A.P. Ramirez, and A. Cassanhoi, "Phase Transition Behavior in the Random Field Antiferromagnet Fe_{0.5}Zn_{0.5}F₂", *Phys. Rev.*, **B55**, 356, (1997).

P.M. Mooney, "Strain Relaxation and Dislocations in SiGe/Si Structures", *Mat. Sci. And Eng.*, **R17**, 105, (1996).

K.P. Rodbell, V. Svilan, L.M. Gignac, P.W. DeHaven, R.J. Murphy, and T.J. Licata, "Film Crystallographic Texture and Substrate Surface Roughness in Layered Aluminum Metallization", Mat. Res. Soc. Proc., **428**, 261, (1996).

F.M. Ross, K.M. Krishnan, N. Thangaraj, R.F.C. Farrow, R.F. Marks, A. Cebollada, S.S.P. Parkin, M.F. Toney, M. Huffman, C.A. Paz De Araujo, L.D. McMilan, J. Cuchiaro, M.C. Scott, C. Echer, F. Ponce, M.A. O'Keefe, and E.C. Nelson, "Applications of Electron Microscopy in Collaborative Industrial Research", MRS Bulletin, **21**/5, 17, (1996).

V. Svilan, K.P. Rodbell, L.A. Clevenger, C. Cabral, Jr., R.A. Roy, C. Lavoie, J. Jordan-Sweet, and J.M.E. Harper, "Crystallographic Texture of C54 Titanium Disilicide as a Function of Deep Submicron Structure Geometry", Mat. Res. Soc. Proc., **427**, 53, (1996).

Beamline X20B

V. Kiryukhin, B. Keimer, R.E. Boltnev, V.V. Khmelenko, and E.B. Gordon, "Inert-Gas Solids with Nanoscale Porosity", Phys. Rev. Lett., **79**, 1774, (1997).

Beamline X20C

C. Cabral, Jr., L.A. Clevenger, J.M.E. Harper, R.A. Roy, K.L. Saenger, G.L. Miles, and R.W. Mann, "In Situ X-ray Diffraction Analysis of $TsSi_2$ Phase Formation from a Titanium-Molybdenum Bilayer", Mat. Res. Symp. Proc., **441**, 296, (1997).

C. Cabral, Jr., L.A. Clevenger, R.A. Roy, G.B. Stephenson, C. Lavoie, K.L. Saenger, J. Jordan-Sweet, R. Viswanathan, G. Morales, and K.L. Ludwig, Jr., "In Situ X-Ray Diffraction Analysis of $CoSi_2$ Phase Formation on Single and Polycrystalline Silicon as a Function of Linewidth and Dopant at Rapid Thermal Annealing Rates", ULSI XI Conference Proceedings, Mat. Res. Soc., p. 439, (1996).

J.R.A. Carlsson, L.A. Clevenger, L.D. Madsen, L. Hiltman, X.H. Li, J. Jordan-Sweet, C. Lavoie, R.A. Roy, C. Cabral, Jr., K.L. Ludwig, G. Morales, K.L. Ludwig, G.B. Stephenson, and H.T.G. Hentzell, "Phase Formation Sequences in the Silicon-Phosphorus System: Determined by In Situ Synchrotron and Conventional X-Ray Diffraction Measurements, and Predicted by a Theoretical Model", Phil. Mag., **B75**, 363, (1997).

L.A. Clevenger, C. Cabral, Jr., R.A. Roy, C. Lavoie, J. Jordan-Sweet, S. Brauer, G. Morales, K.F. Ludwig, Jr., and G.B. Stephenson, "Formation of a Crystalline Metal-Rich Silicide in Thin Film Titanium/Silicon Reactions", Thin Solid Films, **289**, 220, (1996).

L.A. Clevenger, C. Cabral, Jr., R.A. Roy, C. Lavoie, K.L. Saenger, J. Jordan-Sweet, G. Morales, K.L. Ludwig, Jr., and G.B. Stephenson, "In Situ Analysis of the Formation of Thin $TiSi_2$ (< 50 nm) Contacts in Submicron CMOS Structures During Rapid Thermal Annealing", Mat. Res. Symp. Proc., **402**, 96, (1996).

A. Domenicucci, C. Dehm, S. Loh, L.A. Clevenger, C. Dziobkowski, C. Cabral, Jr., C. Lavoie, and J. Jordan-Sweet, "Phase Transformation and Microstructural Properties in Sputtered versus CVD WSix Films", Mat. Res. Symp. Proc., **441**, 3, (1997).

C. Lavoie, C. Cabral, Jr., L.A. Clevenger, J.M.E. Harper, J.L. Jordan-Sweet, K.L. Saenger, and F. Doany, "Light Scattering Measurements of Surface Topography During Formation of Titanium Silicide", Mat. Res. Symp. Proc., **406**, 163, (1996).

B. Park, "Order Re-equilibration Kinetics within the B_2 and DO_3 Phases of Fe_3Al ", Jpn. J. Appl. Phys., **35**, L1287, (1996).

R.F. Saraf, C. Dimitrakopoulos, M.F. Toney, and S.P. Kowalczyk, "Near Surface Structure of Solvent-Free Processed Polyimide Thin Film", *Langmuir*, **12**, 2802, (1996).

S. Song, M. Yoon, S.G.J. Mochrie, G.B. Stephenson, and S.T. Milner, "Faceting Kinetics of Stepped Si(113) Surfaces: Dynamic Scaling and Nano-Scale Grooves", *Surf. Sci.*, **372**, 37, (1997).

Beamline X21

K. Hämäläinen, S. Manninen, C.-C. Kao, W. Caliebe, J.B. Hastings, A. Bansil, S. Kaprzyk, and P.M. Platzman, "High Resolution Compton Scattering Study of Be", *Phys. Rev.*, **B54**, 5453, (1996).

Beamline X22A

R.R. Adzic, J.X. Wang, O.M. Magnussen, and B.M. Ocko, "The Structure of Tl Adlayers on the Pt(111) Electrode Surface: Effects of Solution pH and Bisulfate Coadsorption", *J. Phys. Chem.*, **100**, 14721, (1996).

N.M. Jisrawi, T.R. Thurston, X.O. Yang, S. Mukerjee, J. McBreen, M.L. Daroux, and X.K. Xing, "In Situ Investigation of Working Battery Electrodes using Synchrotron X-ray Diffraction", Proc. of the 1996 Fall Meeting of the Materials Research Society, Boston, MA, *J. of Mat. Res.*, **451**, 301, (1997).

N.M. Jisrawi, H.Wiesmann, M.W. Ruckman, T.R. Thurston, G. Reisfeld, B.M. Ocko, and M. Strongin, "In Situ X-ray Investigation of Hydrogen Charging in Thin Film Bimetallic Electrodes", *J. Mat. Res.*, **12**, 2091, (1997).

L.H. Lewis, D.O. Welch, and T. Thurston, "Texture Determinations in Rare-Earth-Based Permanent Magnets", Proc. 9th International Symposium on Magnetic Anisotropy and Coercivity in Rare-Earth Transition Metal Alloys, Edited by F.P. Missell, H.R. Rechenberg, V. Villas-Boas, and F.J.G. Landgraf, pp. 278-287, (1996).

B.M. Ocko, J.X. Wang, and T. Wandlowski, "Bromide Adsorption on Ag(001): a Potential Induced Two-Dimensional Using Order/Disorder Transition", *Phys. Rev. Lett.*, **79**, 1511, (1997).

B.M. Ocko, and T.H. Wandlowski, "Halide Electroadsorption on Single Crystal Surfaces" Proc. of the Materials Research Society, Electrochemical Synthesis and Modification of Materials, Edited by P. Andricacos, J. Delplancke, S. Corcoran, and T. Moffat, *Mat. Res. Soc. Symp. Proc.*, **451**, 55, (1997).

T.R. Thurston, P. Halder, Y.L. Wang, M. Suenaga, N.M. Jisrawi, and U. Wildgruber, "In Situ Measurements of Texture and Phase Development in $(\text{Bi},\text{Pb})_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10}\text{-Ag}$ Tapes", *J. of Mat. Res.*, **12**, 891, (1997).

T.H. Wandlowski, O. Magnussen, B.M. Ocko, S. Wu, and J. Lipkowski, "The Surface Structure of Au(111) in the Presence of Organic Adlayers—a Combined Electrochemical and Surface X-ray Scattering Study", *J. Electro. Chem.*, **409**, 155, (1996).

Beamline X22B

P. Bödeker, Effect of Metallic Cap Layers on the Magnetic Properties of Thin Epitaxial Cr[001] Films, Ph.D. Thesis, Ruhr-Universitaet Bochum, (1996).

P. Bödeker, P. Sonntag, A. Schreyer, J. Borchers, K. Hamacher, H. Kaiser, and H. Zabel, "Effect of Fe Cap Layers on the Spin Density Waves in Epitaxial Cr(001) Films", *J. Appl. Phys.*, **81**, 5247, (1997).

P. Bödeker, P. Sonntag, A. Schreyer, H. Zabel, J. Borchers, K. Hamacher, and H. Kaiser, "Spin Density Waves in Epitaxial Fe/Cr Films", *Physica*, **B234**, 464, (1997).

G.M. Bommarito, W.J. Foster, P.S. Pershan, and M.L. Schlossman, "A Determination of the Phase Diagram of Relaxed Langmuir Monolayers of Behenic Acid", *J. Phys. Chem.*, **105**, 5265, (1996).

A. Doerr, X.Z. Wu, B.M. Ocko, E.B. Sirota, O. Gang, and M. Deutsch, "Surface Freezing in Mixtures of Molten Alkanes and Alcohols", *Colls. & Surf. A - Physchem. & Eng. Aspects*, **128/1-3**, 63, (1997).

B.W. Gregory, D. Vaknin, J.D. Gray, B.M. Ocko, P. Stroeve, T.M. Cotton, and W.S. Struve, "Two-Dimensional Pigment Monolayer Assemblies for Light Harvesting Applications: Structural Characterization at the Air/water Interface with X-ray Specular Reflectivity and on Solid Substrates by Optical Absorption Spectroscopy", *J. Phys. Chem.*, **B101**, 2006, (1997).

V. Kiryukhin, D. Casa, J.P. Hill, B. Keimer, A. Vigliante, Y. Tomioka, and Y. Tokura, "An X-Ray Induced Insulator-Metal Transition in a Colossal-Magnetoresistive Manganite", *Nature*, **386**, 813, (1997).

V. Kiryukhin, B. Keimer, J.P. Hill, S.M. Coad, and D.M. Paul, "Synchrotron X-Ray Scattering Study of Magnetic Field Induced Transitions in $\text{Cu}_{1-x}(\text{Zn},\text{Ni})_x\text{Ge}_3$ ", *Phys. Rev.*, **B54**, 7269, (1996).

O.M. Magnussen, B.M. Ocko, M. Deutsch, M.J. Regan, P.S. Pershan, D. Abernathy, G. Grubel, and J.F. Legrand, "Self-Assembly of Organic Films on a Liquid Metal", *Nature*, **384**, 250, (1996).

O. M. Magnussen, B. M. Ocko, M. Deutsch, M. J. Regan, P.S. Pershan, L. E. Berman, D. Abernathy, J. F. Legrand, and G. Grubel, "Organic Layers on Liquid Metals: An X-ray Reflectivity Study of Thiols on Mercury", *Nature*, **384**, 250, (1996).

R. Moaz, S. Matlic, E. DiMasi, B.M. Ocko, and J. Sagiv, "Self-Replicating Amphiphilic Monolayers", *Nature*, **384**, 150, (1996).

B.M. Ocko, X. Z. Wu, E. B. Sirota, S. K. Sinha, O. Gang, and M. Deutsch, "Surface Freezing in Chain Molecules: Normal Alkanes", *Phys. Rev.*, **E55**, 3164, (1997).

M.J. Regan, O.M. Magnussen, E.H. Kawamoto, B.M. Ocko, N. Maskil, M. Deutsch, S. Lee, K. Penanen, and L.E. Berman, "X-ray Studies of Atomic Layering at Liquid Metal Surfaces", *J. of Non-Crystalline Solids*, **207**, 762, (1996).

M.J. Regan, P.S. Pershan, O.M. Magnussen, B.M. Ocko, M. Deutsch, and L.E. Berman, "Capillary-wave Roughening of Surface-induced Layering in Liquid Gallium", *Phys. Rev.*, **B54**, 9730-9733, (1996).

M.J. Regan, P.S. Pershan, O.M. Magnussen, B.M. Ocko, M. Deutsch, and L.E. Berman, "X-ray Reflectivity Studies of Liquid Metal and Alloy Surfaces", *Phys. Rev.*, **B55**, 15874-15884, (1997).

M.J. Regan, H. Tostmann, P.S. Pershan, O.M. Magnussen, E. DiMasi, B.M. Ocko, and M. Deutsch, "X-ray Study of the Oxidation of Liquid Gallium Surfaces", *Phys. Rev.*, **B55**, 10786-10790, (1997).

E.B. Sirota, X.Z. Wu, B.M. Ocko, and M. Deutsch, "What Drives the Surface Freezing in Alkanes?", *Phys. Rev. Lett.*, **79**, 531, (1997).

P. Sonntag, Magnetic and Structural Properties of Thin Epitaxial Cr Films, PhD. Thesis, Ruhr-Universitaet Bochum, (1996).

P. Sonntag, P. Bödeker, T. Thurston, and H. Zabel, "Charge Density Waves and Strain Waves in Thin Epitaxial Cr(001) Films on Nb", *Phys. Rev.*, **B52**, 13450, (1995).

Beamline X22C

C. Detlefs, A.H.M.Z. Islam, A.I. Goldman, C. Stassis, P.C. Canfield, J.P. Hill, and D. Gibbs, "Determination of Magnetic Moment Directions using X-ray Resonant Exchange Scattering", *Phys. Rev.*, **B55**, R680, (1997).

G. Helgesen, Y. Tanaka, J.P. Hill, P. Wochner, D. Gibbs, C.P. Flynn, and M.B. Salamon, "Magnetic and Structural Properties of Erbium Films", *Phys. Rev.*, **B56**, 2635, (1997).

J.P. Hill, C.-C. Kao, and D.F. McMorrow, "K-edge Resonant X-ray Magnetic Scattering from a Transition Metal Oxide: NiO", *Phys. Rev. Rapid Comm.*, **B55**, R8662, (1997).

S.C. Perry, W.J. Nuttall, W.G. Stirling, G.H. Langer, and O. Vogt, "X-ray Scattering Study of the two Magnetic Correlation Lengths in Uranium Antimonide", *Phys. Rev.*, **B54**, 10782, (1996).

J.A. Simpson, R.A. Cowley, D.A. Jehan, R.C.C. Ward, M.R. Wells, D.F. McMorrow, K.N. Clausen, T.R. Thurston, and D. Gibbs, "Co-Existence of Long- and Short-Range Magnetic Correlations in Holmium-Erbium Superlattices", *Z. Phys.*, **B101**, 35, (1996).

A. Stunault, S. Langridge, C. Vettier, D. Gibbs, and N. Bernhoeft, "Near-Surface Effects at the Antiferromagnetic Phase Transition in Uranium Phosphide", *Phys. Rev.*, **B55**, 423, (1997).

Beamline X23A2

M.R. Antonio, and L. Soderholm, "Implications of the Unusual Redox Behavior Exhibited by the Heteropolyanion $[EuP_5W_3O_{11}O]^{12-}$ ", *J. Alloys and Compds.*, **250**, 541, (1997).

M. R. Antonio, and L. Soderholm, "Redox Behavior of Europium in the Preyssler Heteropolyanion $[EuP_5W_3O_{11}O]^{12-}$ ", *J. Cluster Sci.*, **7**, 585, (1996).

M. R. Antonio, L. Soderholm, and A.J.G. Ellison, "Local Environments of Erbium and Lutetium in Sodium Silicate Glasses", *J. Alloys and Compds.*, **250**, 536, (1997).

M. R. Antonio, L. Soderholm, and I. Song, "Design of Spectroelectrochemical Cell for *in situ* X-ray Absorption Fine Structure Measurements of Bulk Solution Species", *J. Appl. Electrochem.*, **27**, 784, (1997).

S.V. Bordawekar, E.J. Doskocil, and R.J. Davis, "Influence of Support Composition on the Structure and Reactivity of Strontium Base Catalysts", *Catal. Lett.*, **44**, 193, (1997).

C.E. Bouldin, L. Furenlid, and T. Elam, "MacXAES: An EXAFS Analysis Package for the Macintosh", *Physica*, **B208&209**, 190, (1995).

A.C. Carter, C.E. Bouldin, K.M. Kemner, M.I. Bell, J.C. Woicik, and S.A. Majetich, "The Surface Structure of Cadmium Selenide Nanocrystallites", *Phys. Rev.*, **B55**, 13822, (1997).

J.O. Cross, Analysis of Diffraction Anomalous Fine Structure, PhD. Thesis, University of Washington, (1977).

J.O. Cross, M. Newville, L.B. Sorensen, H.J. Stragier, C.E. Bouldin, and J.C. Woicik, "Separated Anomalous Scattering Amplitudes for the Inequivalent Cu sites in $YBa_2Cu_3O_7$ using DAES", *J. de Phys. IV*, **7**, 745, (1997).

D. Fauteux, A. Massucco, M. van Buren, B. Ouyang, S. G. Greenbaum, S. Kostov, and M. L. denBoer, "A Comparative Study of LiMn_2O_4 from Various Sources", *Mat. Res. Soc. Proc.*, **369**, 59, (1996).

M.R. Franklin, Structure and Magnetism in Co/X, Fe/Si and Fe/{FeSi} Multilayers, PhD Thesis, Michigan State University, (1996).

M.F. Garcia, J.A. Anderson, and G.L. Haller, "Alloy Formation and Stability in Pd-Cu Bimetallic Catalysts", *J. Phys. Chem.*, **100**, 16247, (1996).

D.M. Giaquinta, L. Soderholm, S.E. Yuchs, and S.R. Wasserman, "The Speciation of Uranium in a Smectite Clay: Evidence for Catalysed Uranyl Reduction", *Radiochimica Acta*, **76**, 113, (1997).

D.M. Giaquinta, S.E. Yuchs, L. Soderholm, and S.R. Wasserman, "The Structure of Uranium in Surface Modified Clays", *J. Alloys and Compds.*, **249**, 142, (1997).

C.J. Gutierrez, R. Selestino, R.A. Mayanovic, and G. Prinz, "Evidence for Loose Spins in Epitaxial Al/Fe/Al", *J. Appl. Phys.*, **81**, 5352 (1997).

V.G. Harris, K.M. Kemner, B.N. Das, J.C. Woicik, P. Crespo, A. Hernando, and A. Garcia Escorial, "Mechanical-alloying and Lattice Distortions in Ball-milled CuFe", *J. de Phys. IV*, **7**, 1151, (1997).

V.G. Harris, K.M. Kemner, W.T. Elam, B.N. Das, N.C. Koon, J. Kirkland, P. Crespo, A. Hernando, A. Garcia Escorial, and J. Woicik, "Near-Neighbor Mixing and Bond Dilation in Mechanically-Deformed CuFe", *Phys. Rev.*, **B54**, 6249, (1996).

K. M. Kemner, W. T. Elam, D. B. Hunter, and P. M. Bertsch, "EXAFS Studies of the Local Environment of Cs in CsBr-dibenzo-18-crown-6 Ether Solutions and Powders", *J. Phys. Chem.*, **100**, 11698, (1996).

K.M. Kemner, D.B. Hunter, W.T. Elam, and P.M. Bertsch, "Cesium XAFS Studies of Solution Phase Cs-Ionophore Complexation", Synchrotron Radiation Techniques in Industrial, Chemical and Materials Science, Plenum Press, pp. 149-158, (1996).

K. M. Kemner, Y. U. Idzerda, V. G. Harris, V. Chakarian, W. T. Elam, C. -C. Kao, E. Johnson, Y. C. Feng, D. E. Laughlin, C. T. Chen, K. -K. Lee, and J. C. Lodder, "Direct Observation of Cr Magnetic Order in CoCrTa and CoCrPt Thin Films", *Rapid Comm. J. App. Phys.*, **81**, 1002, (1997).

A.J. Kropf, XAFS and Reflectivity Investigations of Solid-Solid Interfaces in Superlattices and Thin Films, PhD Thesis, University of Notre Dame, (1977).

G. Larsen, E. Lotero, L.M. Petkovic, and D.S. Shobe, "Alcohol Dehydration Reactions over Tungstated Zirconia Catalysts", *J. of Catal.*, **169**, 67, (1997).

Q. Lu, XAFS Investigations of Structural Properties at Internal Interfaces, PhD Thesis, University of Notre Dame, (1996).

Q. Lu, B. A. Bunker, H. Lou, A. J. Kropf, K. M. Kemner, J. K. Furdyna, and G. C. Hua, "X-ray Study of Atomic Correlations in ZnCdSeTe Epitaxial Thin Films", *Phys. Rev.*, **B55**, 9910, (1997).

R.A. Mayanovic, Y. Feng, K.W. Groh, Y. Wang, R.E. Giedd, and M.G. Moss, "Local Structure Surrounding Implanted As Ions in Polysulfone Films", *Mat. Res. Soc. Proc.*, **321**, 113 (1994).

R.A. Mayanovic, C.J. Gutierrez, and G. Prinz, "Investigations on Fe Lattice Strain Relaxation in the Al/Fe/Al Trilayer", *Mat. Res. Soc. Proc.*, **437**, 27, (1996).

P. Menacherry, and M.F. Garcia, "An X-Ray Absorption Spectroscopy Determination of the Morphology of Palladium Particles in KL-zeolite", *J. Catal.*, **166**, 75, (1997).

K.E. Miyano, J.C. Woicik, L. H. Robins, C.E. Bouldin, and D.K. Wickenden, "Extended X-ray Absorption Fine Structure Study of $\text{Al}_x\text{Ga}_{1-x}\text{N}$ Films", *Appl. Phys. Lett.*, **70**, 2108, (1997).

K.E. Miyano, J.C. Woicik, P. Sujatha Devi, and H.D. Gafney, "Cr K edge X-ray Absorption Study of Cr Dopants in Mg_2SiO_4 and Ca_2GeO_4 ", *Appl. Phys. Lett.*, **71**, 1168, (1997).

B. Ravel, M. Newville, J.O. Cross, and C.E. Bouldin, "Analysis of DAES Fine Structure and Background", *Physica*, **B208&209**, 145, (1995).

L. Soderholm, S. Skanthakumar, U. Staub, M. R. Antonio, and C.W. Williams, "The Effect of f-ion Valence on Superconductivity in the Series $\text{Pb}_2\text{Sr}_2\text{RCu}_3\text{O}_8$ (R=Ce, Pr, Tb and Am)", *J. Alloys and Compds.*, **250**, 623, (1997).

U. Staub, S. Skanthakumar, L. Soderholm, and R. Osborn, "Magnetic Properties of $\text{Pb}_2\text{Sr}_2\text{PrCu}_3\text{O}_8$ ", *J. Alloys and Compds.*, **250**, 581, (1997).

U. Staub, L. Soderholm, S. Skanthakumar, and M. R. Antonio, "Oxidation States of the Unusual Rare Earths (R=Ce, Pr, and Tb) in Double Layer High-T_c Superconductors", *J. de Phys. IV.*, **7**, 1077, (1997).

U. Staub, L. Soderholm, S. Skanthakumar, S. Rosenkranz, C. Ritter, and W. Kagunja, "Tb Spin Correlations in $\text{Pb}_2\text{Sr}_2\text{Tb}_{.5}\text{Ca}_{.5}\text{Cu}_3\text{O}_8$ ", *Europhys. Lett.*, **34**, 447, (1996).

J. P. Urbach, O. M. Foller, E. Goering, H. Paulin, M. Klemm, S. Horn, and M.L. denBoer, "Characterization of the Metallic and Insulating Phases of V_2O_3 and $(\text{V},\text{Cr})_2\text{O}_3$ by NEXAFS", *J. de Phys. IV.*, **7**, 535, (1997).

H. Wang, Platinum-Tin Bimetallic Catalysts Supported on L-Zeolite: Synthesis and Characterization, PhD Thesis, Yale University, (1997).

S. R. Wasserman, D. M. Giaquinta, S. E. Yuchs, and L. Soderholm, "The Effects of Surface Modification on the Speciation of Metal ions Intercalated into Aluminosilicates", *Mat. Res. Soc. Proc.*, **465**, 473, (1997).

S.R. Wasserman, S.E. Yuchs, D. Giaquinta, L. Soderholm, and K. Song, "Nanoscale Encapsulation: The Structure of Cations in Hydrophobic Microporous Aluminosilicates", *J. de Phys. IV.*, **7**, 803, (1997).

J.C. Woicik, C.E. Bouldin, K.E. Miyano, and C.A. King, "Unit Cell of Strained GeSi", *Phys. Rev.*, **B55**, 15386, (1997).

Beamline X23A3

W.B. Alexander, P.E. Pehrsson, D. Black, and J.E. Butler, "X-ray Diffraction Analysis of Strain and Mosaic Structure in (011)-Oriented Diamond", III-Nitride SiC and Diamond Materials for Electronic Devices, *MRS Symp. Proc.*, **423**, 305, (1996).

A.J. Allen, G.G. Long, H.M. Kerch, S. Krueger, G. Skandan, H. Hahn, and J.C. Parker, "Sintering Studies of Nanophase Ceramic Oxides using Small-Angle Scattering", Ceramics: Charting the Future, Proc. 8th CIMTEC World Ceramics Congress and Forum on New Materials, edited by P. Vincenzini, *Advances in Sci and Tech.*, **3D**, 1755, (1995).

G. Beaucage, J.H. Aubert, R.R. Lagasse, D.W. Schaefer, T. Reiker, P. Ehrlich, R.S. Stein, S. Kulkarni, and P. Whaley, "Nanostructured Semi-crystalline Polymer Foams", *J. Polymer Sci. and Polymer Phys.*, **34**/17, 3063, (1996).

D.B. Eason, Z. Yu, W.C. Boney, J.W. Cook, Jr., J.F. Schetzina, D.R. Black, G. Cantwell, and W.C. Harsch, "High-Brightness Light-Emitting Diodes Grown by MBE on ZnSe Substrates", *J. Vac. Sci. and Technol.*, **B13**/4, 1566, (1995).

G. Fogarty, B. Steiner, M. Cronin-Golomb, U. Laor, M.H. Garrett, J. Martin, and R. Shrin, "Antiparallel Ferroelectric Domains in Photorefractive Barium Titanate and Strontium Barium Niobate Observed by High-Resolution X-ray Diffraction Imaging", *J. Opt. Soc. Am.*, **B13**, 2636, (1996).

S. Han, G. Rodriguez, A. Taylor, M.A. Plano, M.D. Moyer, M.A. Moreno, L.S. Pan, D.R. Black, H.E. Burdette, J. Agers, and A. Chen, "Correlation of Electrical Properties with Defects in a Homoepitaxial Chemical-Vapor-Deposited Diamond Film", *MRS Symp. Proc.*, **416**, 343, (1996).

X. Hu, F. Liu, I. Baker, and D. Black, "The Effect of X-radiation on the Plastic Deformation of Ice", *Phil. Mag.*, **A73**/5, 1355, (1996).

J. Ilavsky, A.J. Allen, G.G. Long, H. Herman, and C.C. Berndt, "Characterization of the Closed Porosity in Plasma-Sprayed Alumina", *J. Mater. Res.*, **32**, 3407, (1997).

J. Ilavsky, A.J. Allen, G.G. Long, S. Krueger, H. Herman, and C.C. Berndt, "Influence of Spray Angle on the Porous Microstructure of Plasma-Sprayed Ceramic Deposits", *J. Amer. Ceram. Soc.*, **80**/3, 733, (1997).

R.A. Livingston, and A.J. Allen, "Application of Small-Angle Neutron Scattering Method to the Study of the Durability of Historic Brick and Mortar", *Ceramics in Architecture, Proc. 8th CIMTEC World Ceramics Congress and Forum on New Materials*, edited by P. Vincenzini, *Monographs in Materials and Society*, **1**, 573, (1995).

G.G. Long, A.J. Allen, S. Krueger, J. Thomas, D.L. Johnson, and C.J. Hwang, "Small-Angle Scattering Studies of the Microstructure of Silicon Nitride during Processing", *High-Performance Materials in Engine Technology, Proc. 8th CIMTEC World Ceramics Congress and Forum on new Materials*, edited by P. Vincenzini, *Advances in Sci. and Tech.*, **9**, 129, (1995).

B. Olivier, A. Lagasse, D. Schaefer, J. Barnes, and G.G. Long, "Pore Orientation Periodicity in Porous Polymer and Carbon Structures", *Macromolecules*, **29**, 8615, (1996).

P. Pehrsson, T. McCormick, B. Alexander, M. Marchywka, D. Black, J. Butler, and S. Prawer, "Homoepitaxial Mosaic Growth and Liftoff of Diamond Films", *Diamond for Electronic Applications, MRS Symp. Proc.*, **416**, 51, (1996).

R. Spal, C. Chiang, G. Riley, and C. Christopherson, "Synchrotron Radiation Digital Microradiography of Strained High-Temperature Superconductor Composite Tapes", *Proc. ICCE/4 fourth Int'l Conf. On Composite Engineering*, pp. 935-936, (1997).

B.L. Steiner, L.E. Levine, M. Brown, and D. Larson, "Residual Disorder in Low-Pressure Low-Thermal-Gradient Liquid-Encapsulated Czochralski Gallium Arsenide Observed in High-Resolution Synchrotron Diffraction Imaging", *J. Cryst. Growth*, **169**, 1, (1996).

L.D. Zhu, J. Zhao, F. Wang, G. Fogarty, P. Lu, S.B. Kang, M. Sinclair, D. Dimos, M. Cronin-Golomb, B. Steiner, P.E. Norris, B. Kear, and B. Gallois, "Epitaxial Electro-Optical SBN Films by Single Source Plasma Enhanced Metalorganic Chemical Vapor Deposition", *Appl. Phys. Lett.*, **67**, 1836, (1995).

Beamline X23B

- J.D. Ayers, V.G. Harris, J.C. Sprague, and W.T. Elam, "Nucleation of the Nanocrystalline Phase in $\text{Fe}_{73.5}\text{Cu}_1\text{Nb}_3\text{Si}_{13.5}\text{B}_9$ ", *J. Appl. Phys.*, **75**, 5801, (1994).
- J. D. Ayers, V. G. Harris, J. A. Sprague, and W. T. Elam, "The Local Atomic Order of Cu and Fe in Heat Treated $\text{Fe}_{73.5}\text{Nb}_3\text{Cu}_1\text{Si}_{13.5}\text{B}_9$ Ribbons", *IEEE Trans. on Mag.*, **29**, 2664, (1993).
- J. D. Ayers, V. G. Harris, J. A. Sprague, W. T. Elam, and H. N. Jones, "A Model for Nucleation of Nanocrystals in the Soft Magnetic Alloy $\text{Fe}_{73.5}\text{Nb}_3\text{Cu}_1\text{Si}_{13.5}\text{B}_9$ ", Proceedings of the 3rd International Conference on Nanostructured Materials, Edited by M. L. Trudeau, V. Provenzano, R. D. Shull, and J. Y. Ying, Kona, pp. 391-396, (1996).
- M.I. Bell, K. H. Kim, and W. T. Elam, "Direct Observation of Disorder in Perovskite-Structure Ferroelectrics", *Ferroelectrics*, **120**, 103, (1991).
- D. B. Chrisey, G. P. Summers, W. G. Maisch, E. A. Burke, W. T. Elam, H. Herman, J. P. Kirkland, and R.A. Neiser, "Catastrophic Loss of Superconductivity in Ion-Irradiated Films of $\text{Yba}_2\text{Cu}_3\text{O}_{7-\delta}$ ", *Appl. Phys. Lett.*, **53**, 1001, (1988).
- J.O. Cross, B.R. Bennett, M.I. Bell, and K.J. Kuhn, "Synthetic Wide Band-Pass X-ray Polarizers", *Appl. Phys. Lett.*, **70**, 224, (1997).
- P.C. Dorsey, V.G. Harris, P. Lubitz, D. Chrisey, and N.C. Koon, "X-ray Absorption Fine Structure Studies of $(\text{Mn}_x\text{Zn}_{1-x})\text{Fe}_2\text{O}_4$ Films", Mat. Res. Soc. Symp. Proc., **375**, 33, (1995).
- J. A. Eastman, M. R. Fitzsimmons, M. Müller-Stach, G. Wallner, and W. T. Elam, "Characterization of Nanocrystalline Pd by X-ray Diffraction and EXAFS", *Nanostruct. Mater.*, **1**, 47, (1992).
- A.S. Edelstein, V.G. Harris, L. Kurihara, D.R. Rolison, and F.H. Katz, "Chemical Synthesis and Properties of Nanocrystalline $\text{Cu}_{80}\text{Co}_{20}$ ", Processing and Properties of Nanocrystalline Materials, edited by C. Suryanarayana, J. Singh, and F.H. Froes, Proceedings of the Minerals, Metals and Materials Society, pp. 111-122, (1996).
- A.S. Edelstein, V.G. Harris, D. Rolison, J.H. Perepezko, and D. Smith, "Nanocrystalline Solid Solutions of Cu/Co and Other Novel Nanomaterials", Mat. Res. Soc. Symp. Proc., **457**, 261, (1997).
- A.S. Edelstein, F.H. Kaatz, V.G. Harris, L. Kurihara, D.R. Rolison, and D.J. Gillespie, "Chemically-Prepared CuCo and CuFe Nanoparticles", Clusters and Nanostructured Materials, edited by P. Jena and S.N. Behera, Nova Science Pub., Inc., New York, pp. 41-50, (1996).
- W. T. Elam, J. P. Kirkland, R. A. Neiser, E. F Skelton, S. Sampath, and H. Herman, "Plasma Sprayed High T_c Superconductors", *Adv. Cer. Mat.*, **2/3B**, 411, (1987).
- J.L. Feldman, W.T. Elam, A.C. Ehrlich, E.F. Skelton, D.D. Dominguez, D.D.L. Chung, and F.W. Lytle, "Polarized X-Ray Absorption Studies of Graphite Intercalated-Bromide Compounds", *Phys. Rev.*, **B33**, 7961, (1986).
- C.J. Gutierrez, V.G. Harris, J.J. Krebs, W.T. Elam, and G.A. Prinz, "Magnetic and Structural Characteristics of Epitaxial $\text{Fe}_x\text{Co}_{1-x}$ Alloy Films on ZnSe(001)", *J. Appl. Phys.*, **73**, 6763, (1993).
- C.J. Gutierrez, G.A. Prinz, J.J. Krebs, M.E. Filipkowski, V.G. Harris, and W.T. Elam, "Magnetic and Structural Studies of Epitaxial (001) Fe and (001) $\text{Fe}_x\text{Co}_{1-x}$ Alloy Film Structures", *J. Mag. and Mag. Mat.*, **126**, 232, (1993).

V.G. Harris, "A Spinning-Stage, Total-Electron-Yield Detector for the Elimination of Diffraction Peaks in X-ray Absorption Spectra", *Rev. Sci. Instrum.*, **68**/1, 23, (1997).

V.G. Harris, K.D. Aylesworth, B.N. Das, W.T. Elam, and N.C. Koon, "Determination of Structural Anisotropy in Amorphous Tb-Fe Alloy Films", *IEEE Trans. on Magn.*, **28**, 2955, (1992).

V.G. Harris, K.D. Aylesworth, W.T. Elam, N.C. Koon, R. Coehoorn, and W. Hoving, "Evolution of Structure in Fe Layer Thickness in Low-Dimensional Fe/Tb Multilayered Films", *Mat. Res. Soc. Symp. Proc.*, **238**, 635, (1992).

V.G. Harris, K.D. Aylesworth, K.H. Kim, W.T. Elam, and N.C. Koon, "EXAFS Studies of IBS Amorphous Fe-Tb Alloy Films", *J. Appl. Phys.*, **70**, 6311, (1991).

V. G. Harris, B. N. Das, M. Rubenstein, J. L. Goldberg, W. T. Elam, and N. C. Koon, "Structural Evolution and Magnetoresistance Properties of Heat Treated $\text{Cu}_{80}\text{Co}_{15}\text{Fe}_5$ Ribbons", *IEEE Trans. on Mag.*, **29**, 2616, (1993).

V.G. Harris and W.T. Elam, "A Miniature Total Electron Yield Detector for Measurement of X-ray Absorption Spectra", *Rev. Sci. Instrum.*, **68**/5, 1972, (1997).

V.G. Harris, W. T. Elam, and N. C. Koon, "Correlation of Magnetic and Structural Anisotropy in Amorphous Tb-Fe Films", *J. Magn. Soc. Jpn.*, **17**, 267, (1993).

V.G. Harris, W.T. Elam, and N.C. Koon, "Structural Origins of Perpendicular Magnetic Anisotropy in Amorphous non-S-state Rare Earth - Transition Metal Alloy Films", *High Density Digital Recording*, Edited by K.H.J. Buschow, G.J. Long and F. Grandjean, *Appl. Sci.*, **229**, 483-517, (1993).

V.G. Harris, K.M. Kemner, W.T. Elam, B.N. Das, N.C. Koon, J. Kirkland, P. Crespo, A. Hernando, A. Garcia Escorial, and J. Woicik, "Near-neighbor Mixing and Bond Dilation in Mechanically-Deformed CuFe", *Phys. Rev.*, **B54**, 6249, (1996).

V.G. Harris, N.C. Koon, C.M. Williams, Q. Zhang, and M. Abe, "Cation Distributions in Spinel Ferrites Observed via EXAFS Measurements", *J. Appl. Phys.*, **79**/**8**, 4561, (1996).

V.G. Harris, N.C. Koon, C.M. Williams, Q. Zhang, M. Abe, and J. Kirkland, "Cation Distributions in Spinel Ferrites via EXAFS", *Appl. Phys. Lett.*, **68**/**15**, 2082, (1996).

V.G. Harris, N.C. Koon, C.M. Williams, Q. Zhang, M. Abe, J.P. Kirkland, and D.A. McKeown, "Direct Measurement of Octahedral and Tetrahedral Site Environments in NiZn-Ferrites", *IEEE Trans. on Magn.*, **31**/**6**, 3473, (1995).

V.G. Harris, S.A. Oliver, J.D. Ayers, B.N. Das, and N.C. Koon, "Crystallization of Thin Amorphous Fe-B Films Studied via Empirical EXAFS Modeling", *Appl. Phys. Lett.*, **68**/**15**, 2073, (1996).

V.G. Harris, S.A. Oliver, J.D. Ayers, B.N. Das, and N.C. Koon, "Quantitative Crystallization Studies of Thin Amorphous $\text{Fe}_{80}\text{B}_{20}$ Films via Empirical Modeling of EXAFS Data", *Mat. Res. Soc. Symp. Proc.*, **375**, 9, (1995).

V.G. Harris, S.A. Oliver, K.H. Kim, W.T. Elam, R. Culbertson, W.B. Nowak, and C. Vittoria, "Magnetic and Structural Investigation of Heat-Treated ion Beam Sputtered Amorphous $\text{Co}_{74}\text{Fe}_6\text{B}_{15}\text{Si}_5$ Films", *IEEE Trans. on Magn.*, **26**, 1459, (1990).

V.G. Harris, C.M. Williams, Q. Zhang, and M. Abe, "Multiple-Scattering Extended X-ray Absorption Fine Structure Analysis of Spinel Ferrites", *Coll. C1, Supp. au J. de Phys.*, **7**, 215 (1997).

H.A. Hoff, G.L. Waytena, J.W. Glesener, V.G. Harris, and D.P. Pappas, "Critical Thickness of Single Crystal fcc-Fe on Diamond", *Surf. Sci.*, **326**, 252, (1995).

J.S. Horwitz, P.C. Dorsey, N.C. Koon, M. Rubinstein, J.M. Byers, D.J. Gillespie, M.S. Osofsky, V.G. Harris, K.S. Grabowski, D.L. Knies, E.P. Donovan, and D.B. Chrisey, "The Effect of Oxygen Pressure and Temperature on the Structure and Properties of Pulsed Laser Deposited $\text{La}_x\text{Ca}_{1-x}\text{Mn}_\text{O}_d$ Films", *SPIE*, **2703**, 526, (1996).

J.S. Horwitz, P.C. Dorsey, N.C. Koon, M. Rubinstein, J.M. Byers, D.J. Gillespie, M.S. Osofsky, V.G. Harris, K.S. Grabowski, D.L. Knies, E.P. Donovan, and D.B. Chrisey, "The Effect of Oxygen Pressure on the Structure and Properties of Pulsed Laser Deposited $\text{La}_x\text{C}_{1-x}\text{Mn}_\text{O}_d$ Films", *Mat. Res. Soc. Symp. Proc.*, **401**, 525, (1996).

F.H. Kaatz, V.G. Harris, L. Kurihara, D.R. Rolison, and A.S. Edelstein, "Slow Oxidation of Cu-Co Nanocrystals", *Appl. Phys. Lett.*, **67/5**, 3807, (1995).

K. M. Kemner, W. T. Elam, V. G. Harris, Y. U. Idzerda, and J. A. Wolf, "Distinguishing the Close-Packed Hexagonal and Face Centered Cubic Phases of the Metallization of Diamond by Polarization-Dependent Extended X-ray Absorption Fine Structure", *J. Vac. Sci. Technol.*, **B14**, 3207, (1996).

K. M. Kemner, D. B. Hunter, W. T. Elam, and P. M. Bertsch, "Cesium XAFS Studies of Solution Phase Cs-Ionophore Complexation", *Synchrotron Radiation Techniques in Industrial, Chemical and Materials Science*, Plenum Press, pp. 149-158, (1996).

K. M. Kemner, Y. U. Idzerda, V. G. Harris, V. Chakarian, W. T. Elam, C. -C. Kao, E. Johnson, Y. C. Feng, D. E. Laughlin, C. T. Chen, K. -K. Lee, and J. C. Lodder, "Direct Observation of Cr Magnetic Order in CoCrTa and CoCrPt Thin Films", *J. App. Phys.*, **81**, 1002, (1997).

K. H. Kim, W. T. Elam, and E. F. Skelton, "Extended X-ray Absorption Fine Structure Study of Potassium Niobate", *Mat. Res. Soc. Symp. Proc.*, **172**, 291, (1991).

J. P. Kirkland, R. A. Neiser, H. Herman, S. Sampath, E. F. Skelton, D. Gansert, and H. G. Wang, "Thermal Spraying of Superconducting Oxide Coatings", *Adv Cer. Mat.*, **2/3B**, 401, (1987).

R.A. Neiser, J.P. Kirkland, W.T. Elam, and S. Sampath, "Optical Performance of the Naval Research Laboratory's Materials Analysis Beam Line at the NSLS", *Nucl. Instrum. & Meth.*, **A266**, 220, (1988).

R.A. Neiser, J.P. Kirkland, W.T. Elam, H. Herman, S. Rangaswamy, V.M. Letourneau, and M. Osofsky, "Electrical, Chemical, and Structural Properties of Plasma Sprayed Y-Ba-Cu-Oxide Superconducting Coatings", *Proceedings of MRS Symp. On High Temperature Superconductors*, **99**, 689-693, (1988).

R.A. Neiser, J.P. Kirkland, H. Herman, W.T. Elam, and E.F. Skelton, "Plasma Sprayed Superconducting Oxide Coatings", *Mat. Sci. and Engin.*, **91**, L13, (1987).

G.S. Nolas, V.G. Harris, G.A. Slack, D.T. Morelli, and T.M. Tritt, "Low-Temperature Transport Properties of the Mixed-Valence Semiconductor $\text{Ru}_{0.5}\text{Pd}_{0.5}\text{Sb}_3$ ", *J. Appl. Phys.*, **80/11**, 6304, (1996).

S.A. Oliver, V.G. Harris, C.Vittoria, W.T. Elam, K.H. Kim, H.H. Hamdeh, and M. Alhabash, "Magnetic Properties and Local Ordering During Thermal Annealing of Amorphous $\text{Fe}_{75}\text{Ni}_5\text{B}_{15}\text{Si}_5$ Films", *J. Appl. Phys.*, **70**, 5842, (1991).

D.P. Pappas, J.W. Glesener, V.G. Harris, Y.U. Idzerda, J.J. Krebs, and G.A. Prinz, "Growth of FCC-Fe Films on Diamond", *Appl. Phys. Lett.*, **64**, 28, (1994).

D.P. Pappas, J.W. Glesener, V.G. Harris, J.J. Krebs, Y.U. Idzerda, A.A. Morrish, and G.A. Prinz, "Epitaxial Growth of FCC Fe and Cu Films on Diamond", *Proc. Of Mat. Res. Soc.* **313**, 369, (1993).

D.P. Pappas, V.G. Harris, H.A. Hoff, and G. Waytena, "Stabilization of Single Crystal FCC Fe on Diamond", *Mat. Res. Soc. Symp. Proc.*, **339**, 241, (1994).

S.B. Roscoe, A.K. Kakkar, T.J. Marks, A. Malik, M.K. Durbin, W. Lin, G.K. Wong, and P. Dutta, "Self-Assembled Chromophoric NLO Monolayers: X-ray Reflectivity as a Probe of Building Block-film Microstructure Relationships", *Langmuir*, **12**, 4218, (1996).

A. Shih, C. Hor, W. Elam, J. Kirkland, and D. Mueller, "Surface Geometry of BaO on W(100): A Surface-Extended X-ray-Absorption Fine-Structure Study", *Phys. Rev.*, **B44**, 5818, (1991).

P. Skeath, W. T. Elam, W. K. Burns, F. A. Stevie, and T. H. Briggs, "Concentration Dependence of the Octahedral Ti^{4+} Center in $LiNbO_3$: Its Effect on Refractive Indices", *Phys. Rev. Lett.*, **59**, 1950, (1987).

E.F. Skelton, W.T. Elam, D.U. Gubser, S.H. Lawrence, M.S. Osofsky, L.E. Toth, and S.A. Wolf, "Temperature-Dependent X-Ray Studies of the High T_c Superconductor $La_{1.9}Ba_{0.1}CuO_4$ ", *Phys. Rev.*, **B35**, 7140, (1987).

J.E. Snyder, V.G. Harris, J.W. Harrell, F.T. Parker, and S. Kitahata, "Local Structure of as-fabricated and Partially-Reduced Co,Ti,Sn-Substituted Ba-hexaferrite Powder", *J. Appl. Phys.*, **81/5**, 3824, (1997).

J. E. Snyder, V.G. Harris, N.C. Koon, X. Sui, and M.H. Kryder, "Local Structure of the Amorphous Precursor to Ba-Hexaferrite Thin Films: An Anisotropic Octahedral Fe-O Glass Network", *Phys. Rev. Lett.*, **77**, 3383, (1996).

J. E. Snyder, V.G. Harris, N.C. Koon, X. Sui, and M.H. Kryder, "Determination of Local Structure in the Amorphous Precursors to Ba-Hexaferrite Thin Films", *J. Appl. Phys.*, **79/8**, 4891, (1996).

J. E. Snyder, V.G. Harris, N.C. Koon, X. Sui, and M.H. Kryder, "Local Anisotropic Structure in Amorphous Ba-Fe-O Films and its Role in Determining Magnetic Anisotropy in Crystallized Ba-Hexaferrite Films", *IEEE Trans. on Magn.*, **31/6**, 3844, (1995).

X. Sui, M. Scherge, M.H. Kryder, J.E. Snyder, V.G. Harris, and N.C. Koon, "Barium Hexaferrite Thin Film Recording Media", *J. Mag. Mag. Mater.*, **155**, 132, (1996).

R. Swineford, D. Pappas, and V.G. Harris, "Structure of C-Stabilized fcc Fe on Diamond: The Growth of Single Crystal Austenite", *Phys. Rev.*, **B52**, 7890, (1995).

Beamline X24A

B. Armen, S.H. Southworth, J.C. Levin, U. Arp, T. LeBrun, and M.A. MacDonald, "Xenon Spectator and Diagram $L_{3-M_{4,5}}M_{4,5}$ Auger Intensities near the L_3 Threshold", *Phys. Rev.*, **A56**, R1079, (1997).

U. Arp, J.W. Cooper, T. LeBrun, S.H. Southworth, M. Jung, and M.A. MacDonald, "Angular Correlation Between $K\alpha$ Photons and $L_{2,3}-M_{2,3}M_{2,3}$ Auger Electrons Following Argon 1s Photoionization", *J. Phys. B: at Mol. Opt. Phys.*, **29**, L837, (1996).

U. Arp, T. LeBrun, S.H. Southworth, M.A. MacDonald, and M. Jung, "X-ray Fluorescence and Auger-Electron Coincidence Spectroscopy of Vacancy Cascades in Atomic Argon", *Phys. Rev. A55*, 4273, (1997).

J.D. Mills, J.A. Sheehy, T.A. Ferrett, S.H. Southworth, R. Mayer, D.W. Lindle, and P.W. Langhoff, "Nondipole Resonant X-ray Spectroscopy: Polarized Inelastic Scattering at the K Edge of C₁₂", *Phys. Rev. Lett.*, **79**, 383, (1997).

K.E. Miyano, Y. Ma, S.H. Southworth, P.L. Cowan, and B.A. Karlin, "Resonant Raman Scattering in Potassium and Chlorine K β X-ray Emission from KCl", *Phys. Rev.*, **B54**, 12022, (1996).

Beamline X24C

M.P. Kowalski, R.G. Cruddace, J.F. Seely, J.C. Rife, K.F. Heidemann, U. Heinzmann, U. Kleineberg, K. Osterried, and D. Menke, "Efficiency of a Multilayer-Coated, Ion-Etched Laminar Holographic Grating in the 14.5-16.0-nm Wavelength Region", *Optics Letts.*, **22**, 834, (1997).

M.P. Kowalski, R.G. Cruddace, J.F. Seely, J.C. Rife, W.R. Hunter, and T.W. Barbee, Jr., "The EUV Performance of an Ion-Etched Blazed Diffraction Grating", *J. Electr. Spectro. Rel. Phenom.*, **80**, 473, (1996).

W.R.L. Lambrecht, S.N. Rashkeev, B. Segall, K. Lawniczak-Jablonska, T. Suski, E.M. Gullikson, J.H. Underwood, R.C.C. Perera, J.C. Rife, I. Gregory, S. Porowski, and D.K. Wickenden, "X-Ray Absorption, Glancing-Angle Reflectivity, and Theoretical Study of the N K- and Ga M_{2,3}-Edge Spectra in GaN", *Phys. Rev.*, **B55**, 2612, (1997).

J.F. Seely, M.P. Kowalski, R.G. Cruddace, J.C. Rife, T.W. Barbee, Jr., and W.R. Hunter, "High Resolution Spectroscopy using Normal-Incidence Multilayer Gratings", UV and X-ray Spectroscopy of Astrophysical and Laboratory Plasmas, edited by K. Yamashita and T. Watanabe, Universal Academy Press, Tokyo, p. 225, (1996).

J.F. Seely, M.P. Kowalski, W.R. Hunter, and G. Gutman, "Reflectance of a Wideband Multilayer X-ray Mirror at Normal and Grazing Incidence", *Appl. Optics*, **35**, 4408, (1996).

Beamline X25

H. Baltes, Y. Yacoby, R. Pindak, R. Clarke, L. Pfeiffer, and L.E. Berman, "Measurement of the X-Ray Diffraction Phase in a 2D Crystal", *Phys. Rev. Lett.*, **79**, 1285, (1997).

D.C. Boisvert, J. Wang, Z. Otwinowski, A.L. Horwich, and P.B. Sigler, "The 2.4 Å Crystal Structure of the Bacterial Chaperonin GroEL Complexed with ATP Gamma S", *Nat. Struct. Bio.*, **3/2**, 170-7, (1996).

K. Braig, Z. Otwinowski, R. Hegde, D.C. Boisvert, A. Joachimiak, A.L. Horwich, and P.B. Sigler, "The Crystal Structure of the Bacterial Chaperonin GroEL at 2.8 Å", *Nature*, **371**, 578, (1994).

Q.R. Fan, L. Mosyak, C.C. Winter, N. Wagtmann, E.O. Long, and D.C. Wiley, "Structure of the Inhibitory Receptor for Human Natural Killer Cells Resembles Haematopoietic Receptors", *Nature*, **389**, 96, (1997).

J.M. Gulbis, Z. Kelman, J. Hurwitz, M. O'Donnell, and J. Kuriyan, "Structure of the C-Terminal Region of p21^{WAF1/CIP1} Complexed with Human PCNA", *Cell*, **87**, 297, (1996).

F. Guo, D.N. Gopaul, and G.D. Van Duyne, "Structure of Cre Recombinase Complexed with DNA in a Site-Specific Recombination Synapse", *Nature*, **389**, 40, (1997).

J.P. Hill, C.-C. Kao, and D.F. McMorrow, "K-Edge Resonant X-Ray Magnetic Scattering from a Transition-Metal Oxide: NiO", *Phys. Rev.*, **B55**, R8662, (1997).

S. Krishnan, J.J. Felten, J.E. Rix, J.K.R. Weber, P.C. Nordine, M.A. Beno, S. Ansell, and D.L. Price, "Levitation Apparatus for Structural Studies of High Temperature Liquids using Synchrotron Radiation", *Rev. Sci. Instrum.*, **68**, 3512, (1997).

H. Li, J.J. Dunn, B.J. Luft, and C.L. Lawson, "Crystal Structure of Lyme Disease Antigen Outer Surface Protein A Complexed with an Fab", *Proc. Nat. Acad. Sci.*, **94**, 3584, (1997).

J.L. Libbert, J.A. Pitney, and I.K. Robinson, "Asymmetric Fraunhofer Diffraction from Roller-Blade Slits", *J. Synch. Rad.*, **4**, 125, (1997).

O.M. Magnussen, B.M. Ocko, M. Deutsch, M.J. Regan, P.S. Pershan, D. Abernathy, G. Grübel, and J.-F. Legrand, "Self-Assembly of Organic Films on a Liquid Metal", *Nature*, **384**, 250, (1996).

M.J. Regan, O.M. Magnussen, E.H. Kawamoto, P.S. Pershan, B.M. Ocko, N. Maskil, M. Deutsch, S. Lee, K. Penanen, and L.E. Berman, "X-Ray Studies of Atomic Layering at Liquid Metal Surfaces", *J. Non-Cryst. Solids*, **205**, 762, (1996).

M.J. Regan, P.S. Pershan, O.M. Magnussen, B.M. Ocko, M. Deutsch, and L.E. Berman, "Capillary-Wave Roughening of Surface-Induced Layering in Liquid Gallium", *Phys. Rev.*, **B54**, 9730, (1996).

M.J. Regan, P.S. Pershan, O.M. Magnussen, B.M. Ocko, M. Deutsch, and L.E. Berman, "X-Ray Reflectivity Studies of Liquid Metal and Alloy Surfaces", *Phys. Rev.*, **B55**, 15874, (1997).

M.J. Regan, H.C. Tostmann, P.S. Pershan, O.M. Magnussen, E. DiMasi, B.M. Ocko, and M. Deutsch, "Oxidation of Liquid Gallium Surfaces: X-Ray Reflectivity Study", *Phys. Rev.*, **B55**, 10786, (1997).

F. Sicheri, I. Moarefi, and J. Kuriyan, "Crystal Structure of the Src Family Tyrosine Kinase Hck", *Nature*, **385**, 602, (1997).

J.A. Simpson, R.A. Cowley, D.A. Jehan, R.C.C. Ward, M.R. Wells, D.F. McMorrow, K.N. Clausen, T.R. Thurston, and D. Gibbs, "Co-Existence of Long- and Short-Range Magnetic Correlations in Holmium-Erbium Superlattices", *Z. Phys.*, **B101**, 35, (1996).

M. Sriram, J. Osipiuk, B.C. Freeman, R.I. Morimoto, and A. Joachimiak, "Human Hsp70 Molecular Chaperone Binds Two Calcium Ions Within the ATPase Domain", *Structure*, **5**, 403, (1997).

Y. Wang, Y. Jiang, M. Meyering-Voss, M. Sprinzl, and P.B. Sigler, "Crystal Structure of the EF-Tu·EF-Ts Complex from Thermus Thermophilus", *Nat. Struct. Biol.*, **4**, 650, (1997).

H. Wu, P.D. Kwong, and W.A. Hendrickson, "Dimeric Association and Segmental Variability in the Structure of Human CD4", *Nature*, **387**, 527, (1997).

Z. Xu, A.L. Horwich, and P.B. Sigler, "The Crystal Structure of the Asymmetric GroEL-GroES-(ADP)₇ Chaperonin Complex", *Nature*, **388**, 741, (1997).

Beamline X26A

P.M. Bertsch, D.B. Hunter, P.R. Nuessle, and S.B. Clark, "Molecular Characterization of Contaminants in Soils by Spatially Resolved XRF & XANES Spectroscopy", *J. de Phys. IV*, **7**, C2-817, (1997).

J.S. Delaney, S. Bajt, S.R. Sutton, and M.D. Dyar, "In Situ Microanalysis of Fe³⁺/ΣFe Ratios in Amphibole by X-ray Absorption Near Edge Structure (XANES) Spectroscopy", *Mineral Spectroscopy, Roger Burns Memorial*, 5, 165, (1996).

W.P. Gates, D.B. Hunter, P.R. Nuessle, and P.M. Bertsch, "A Time Resolved XANES Study of an Organo-Clay Redox System", *J. de Phys. IV*, 7, C2-785, (1997).

D.B. Hunter, P.M. Bertsch, K.M. Kemner, and S.B. Clark, "Distribution and Chemical Speciation of Metals and Metalloids in Biota Collected from Contaminated Environments by Spatially Resolved XRF, XANES and EXAFS", *J. de Phys. IV*, 7, C2-767, (1997).

H. S. Isaacs, and S.-M. Huang, "Behavior of Dissolved Molybdenum during Localized Corrosion of Austenitic Stainless Steel", *J. Electrochem. Soc.*, 143/12, L277, (1996).

R.A. Mayanovic, A.J. Anderson, and S. Bajt, "Microbeam XAFS Studies on Fluid Inclusions at High Temperatures", *J. de Phys. IV*, 7, C2-1029, (1997).

J. Rakovan, and R.J. Reeder, "Intracrystalline Rare Earth Element Distributions in Apatite: Surface Structural Influences on Incorporation During Growth", *Geochimica et Cosmochimica Acta*, 60, 4435, (1996).

T. Tokunaga, G.E. Brown, Jr., I.J. Pickering, S.R. Sutton, and S. Bajt, "Selenium Redox Reactions and Transport Between Ponded Waters and Shallow Sediments", *Environ. Sci. & Technol.*, 31, 1419, (1997).

A. Zappalà, S. Bajt, G.E. Gigante, and A.L. Hanson, "Applications of EDXRF in the Conservation of Acid Papers using a Synchrotron Light Microbeam", *Nucl. Instrum. and Meths. in Phys. Res.*, B117, 145, (1996).

Beamline X26C

U.K. Genick, G.E. Borgstahl, K. Ng, Z. Ren, C. Pradervand, P.M. Burke, V. Srajer, T.Y. Teng, W. Schildkamp, D.E. McRee, and et al., "Structure of a Protein Photocycle Intermediate by Millisecond Time-Resolved Crystallography", *Science*, 275, 1471, (1997).

J.L. Jordan-Sweet, K. Evans-Lutterodt, G.S. Cargill, III, M.A. Marcus, and I.C. Noyan, "Microbeam Diffraction at NSLS", NSLS July Newsletter, p.7, (1997).

K. Moffat, and Z. Ren, "Synchrotron Radiation Applications to Macromolecular Crystallography", *Current Opinion in Struct. Bio.*, 7, 689, (1997).

V. Stojanoff, D.P. Siddons, L.A. Monaco, P. Vekilov, and F. Rosenberger, "X-ray Topography of Tetragonal Lysozyme Grown by the Temperature-Controlled Technique", *Acta Cryst.*, D53, 588, (1997).

P.-C. Wang, G. S. Cargill III, I. C. Noyan, E. G. Liniger, C.-K. Hu, and K. Y. Lee, "Real- Time Measurements of Thermal and Electromigration Strains on Individual Al Interconnects by X-Ray Microdiffraction", International Electron Devices and Materials Symposium Proceedings, A1/10, 63, (1996).

P.-C. Wang, G. S. Cargill III, I. C. Noyan, E. G. Liniger, C.-K. Hu, and K.Y. Lee, "X-Ray Microdiffraction for VLSI", Mat. Res. Soc. Symp. Proc., 427, 35, (1996).

Beamline X27A

B.A. Dowd, "Workshop on X-ray Computed Microtomography: Applications & Techniques", *Synch. Rad. News*, **10**, 5, (1997).

B.L. Illman, and B.A. Dowd, "Synchrotron Applications in Forestry and Forest Products", *Synch. Rad. News*, **10**, 1, (1997).

Beamline X27C

D. Chapman, W. Thomlinson, F. Arfelli, N. Gmür, Z. Zhong, R. Menk, R.E. Johnston, D. Washburn, E. Pisano, and D. Sayers, "Mammography Imaging Studies using a Laue Crystal Analyzer", *Synch. Rad. Instrum.* **67**, 9, (1995), BNL 62394.

R.E. Johnston, D. Washburn, E. Pisano, C. Burns, W. Thomlinson, L.D. Chapman, F. Arfelli, N.F. Gmür, Z. Zhong, and D. Sayers, "Mammography Phantom Studies with Synchrotron Radiation", *Radiology*, **200/3**, 659, (1996), BNL 62733.