The following pages list all publication citations reported to the NSLS in FY 2003 (October 1, 2002 through September 30, 2003). Citations are listed in order of beamline number and then alphabetically by the last name of the first author. This list contains unique citations for journal, published conference proceedings, books, chapters in books, formal reports, informal reports, technical reports, theses, dissertations, and patents when reported. For citation submissions where research was performed on more than one beamline, the citation is listed under each beamline. However, each citation was only counted once. Citations bearing publication dates prior to the Year 2003 are listed only if they had not been previously reported to the NSLS and did not appear in a prior fiscal year's activity report. Diligent effort has been made to ensure that each reference is unique and complete. For journal articles, online searches were performed to locate missing reference information (e.g., year of publication, volume, issue or page numbers). With regard to conference papers, considerable effort was put into ensuring that the citations appeared in published proceedings. Many citations for conferences papers have been omitted from this list if verification could not be made. We apologize to our users and authors for any citations incorrectly omitted.

Several types of journal articles are reported in this list, including premiere journals, peer-reviewed journals and a few that are not peer-reviewed. Premiere journals include: Physical Review Letters, Science, Nature, Cell, EMBO Journal, Nature Structural Biology, Proceedings of the National Academy of Sciences of the United States of America, Structure, and Applied Physics Letters.

In FY 2003, the following types and numbers of publication citations were reported to the NSLS where research was performed in part or in whole at the NSLS.

| | |
|---|---|
| Journals, peer-reviewed, premiere | 113 |
| Journals, other peer-reviewed | 440 |
| Journals, non peer-reviewed | 22 |
| **Total Journals and Magazines** | 575 |
| | |
| Books/Chapters in Books | 17 |
| Published Conference Proceedings | 59 |
| Reports: Technical, Formal, Informal | 1 |
| Theses/Dissertations | 9 |
| Patents | 1 |
| **Total Misc. Publications** | 87 |
| | |
| **Total Citations Listed** | **662** |

| | |
|---|---|
| **NSLS VUV User Publications** | 76 |
| **NSLS X-Ray User Publications** | 489 |
| **NSLS Staff Publications** | 97 |
| | **662** |

# NSLS Users

### Beamline U1A

M Zwahlen, D Brovelli, W Caseri, G Haehner. Orientation and Electronic Structure of Ion-Exchanged Pyridinium Compounds on Mica. *J. Colloid Interface Sci.*. **256**, 262 (2002).

### Beamline U2A

B Chen, D Muthu, Z Liu, A Sleight, M Kruger. High-pressure Optical Study of HfW2O8. *J. Phys.: Condens. Matter*. **14**, 13911-13916 (2002).

E Gregoryanz, A Goncharov, R Hemley, H Mao, M Somayazulu, G Shen. Raman. Infrared, and x-ray evidence for new phases of. *Phys. Rev. B: Condens. Matter*. **66**, 224108 (2002).

R Hemley, Z Liu, E Gregoryanz, H Mao. Infrared and Raman Microspectroscopy of Materials Under Pressure. *Microscopy and Microanalysis*, Vol 9, p. 1098, (2003).

R Hemley, H Mao. Overview of static high pressure science, in High-Pressure Phenomena. *Proceedings of the International School of Physics, "Enrico Fermi" Course CXLVII*, p. 3-40, IOS Press, Amsterdam. (2002).

R Hemley, H Mao. New window on earth and planetary interiors. *Miner. Mag.*. **66**, 791-811 (2002).

Z Liu, J Hu, H Yang, H Mao, R Hemley. High-pressure Synchrotron X-ray Diffraction and Infrared Microspectroscopy: Application to Dense Hydrous Phases. *J. Phys.: Condens. Matter*. **14**, 10641-10646 (2002).

Z Liu, G Lager, R Hemley, N Ross. Synchrotron Infrared Spectroscopic Study of OH-chondrodite and OH-clinohumite at High Pressure. *Am. Mineral.*. **88**, 1412 (2003).

Y Song, R Hemley, Z Liu, M Mosayazulu, H Mao, D Herschbach. High-pressure stability, transformations, and vibrational dynamics of nitrosonium nitrate from synchrotron infrared and Raman spectroscopy. *J. Chem. Phys.*. **119** (4), 2232 (2002).

H Yang, C Prewitt, Z Liu. Crystal structures and infrared spectra of two Fe-bearing hydrous magnesium silicates synthesized at high temperature and pressure. *J. Miner. Petrological Sci.*. **97**, 137-143 (2002).

### Beamline U2B

L Cho, J Reffner, B Gatewood, D Wetzel. Single Fiber Analysis by Internal Reflection Infrared Microspectroscopy. *J. of Forsensic Sci.*. **46** (6), 1309-1314 (2001).

A Eilert, J Sweat, D Wetzel. Parabolic Concentration of Diffusely Transmitted Near-IR Radiation in an Acousto-Optic Tunable Filter Spectrometer. *J. Near Infrared Spectrosc.*. **8**, 239-250 (2000).

A Eilert, D Wetzel. Optics and Sample Handling for Near-Infrared Diffuse Reflection. *Handbook of Vibrational Spectroscopy*, p. 436-452, Wiley, Chichester. (2002).

R Huang, L Miller, C Carlson, M Chance. FTIR Analysis of Tibia Bone from Ovariectomized Cynomolgus Monkeys (Macaca fascialaris) and the Effect of Nandrolone Deconoate Treatment. *Bone*. **30** (2), 492-497 (2002).
S Judex, S Boyd, Y Qin, L Miller, R Muller, C Rubin. Combining High-Resolution MicroCT with Material Composition to Define the Quality of Bone Tissue. *Curr. Osteoporosis Reports*. **1**, 11-19 (2003).
J Radel, J Homan, D Wallace, D Wetzel, S LeVine. FT-IR Microspectroscopic Chemical Analysis of Photoreceptor Outer Segment Changes Resulting from Oxidative Stress. *Invest. Opht. Vis. Sci.*. **41** (4), S23 (2000).
J Sweat, D Wetzel. Near Infrared Acousto-Optic Tunable Filter Based Instrumentation for the Measurement of Dynamic Spectra of Polymers. *Rev. Sci. Instrum.*. **72** (4), 2153-2158 (2001).
D Wetzel, A Eilert, J Sweat. Tunable Filter and Discrete Filter Near-IR Spectrometers. *Handbook of Vibrational Spectroscopy*, p. 436-452, Wiley, Chichester. (2002).
D Wetzel, S LeVine. Biological Applications of Infrared Microspectroscopy. *Infrared and Raman Spectroscopy of Biological Materials*, p. 101-142, Marcel Dekkar, New York. (2000).
D Wetzel, J Reffner. Infrared Spectroscopy goes Microscopic. *Chem. Ind.*. **9** (8), 308-313 (2000).
D Wetzel, P Srivarin, J Finney. Revealing Protein Infrared Spectral Detail in a Heterogenous Matrix Dominated by Starch. *Vib. Spectrosc.*. **31**, 109-114 (2003).
D Wetzel, S LeVine. Spatially Resolved Improved FT-IR Microspectroscopy of Deuterated Species in Tissue. *Microscopy and Microanalysis*, Vol 8, p. 1502, (2002).
D Wetzel, G Williams. Synchrotron Infrared Microspectroscopy of Retinal Layers. *Vib. Spectrosc.*. **30**, 101-109 (2002).
D Wetzel. A New Approach to the Problem of Dispersive Windows in Infrared Microspectroscopy. *Vib. Spectrosc.*. **29**, 291-297 (2002).
D Wetzel. Sensitive Infrared Narrow Band Optimized Microspectrometer. *Vib. Spectrosc.*. **29**, 291-297 (2002).
D Wetzel. Contemporary Near-Infrared Instrumentation. *Near Infrared Technology in the Agricultural and Food Industries*, p. 129-144, Am. Assoc. Cereal Chem., St. Paul. (2001).

**Beamline U4B**

M Harris, G Appel, H Ade. Surface Morphology of Annealed Polystyrene and Poly(methyl methacrylate) Thin Film Blends and Bilayers. *Macromolecules*. **36**, 3307-3314 (2003).
A Lussier, Y Idzerda, S Stadler, S Ogale, S Shinde, V Venkatesan. Characterization for Strontium Titanate/Fe3O4 and TiN/Fe3O4 Interfaces. *J. Vac. Sci. Technol., B*. **20** (4), 1609-1613 (2002).

**Beamline U4IR**

A Boris, D Munzar, N Kovaleva, B Liang, C Lin, A Dubroka, T Holden, B Keimer, C Bernhard, et al.. Josephson Plasma Resonanse and Phonon Anomalies in Trilayer Bi2Sr2Ca2Cu3O10. *Phys. Rev. Lett.*. **89** (27), 277001 (2002).
G Carr. Dynamics of GaAs photocarriers probed with pulsed infrared synchrotron radiation. *Nucl. Instrum. Meth. B*. **199**, 323 (2003).
G Flynn, L Keller. Synchrotron FTIR Examination of Interplanetary Dust Particles: An Effort to Determine the Compounds and Minerals in Interstellar and Circumstellar Dust. *Laboratory Astrophysics Workshop*, Vol NASA CP-2002-211863, p. 201-203, sponsored by NASA. (2002).
L Miller, G Smith, G Carr. Synchrotron-based Biological Microspectroscopy: From the Mid- to the Far-Infrared Regimes. *J. Biol. Phys.*. **29** (1), 219-230 (2003).

**Beamline U5UA**

I Baek, H Lee, H Kim, E Vescovo. Spin Reorientation Transition in Fe(110) Thin Films: The Role of Surface Anisotropy. *Phys. Lett. B*. **67**, 075401 (2003).

**Beamline U7A**

D Abraham, R Twesten, M Balasubramanian, J Kropf, D Fischer, J McBreen, I Petrov, K Amine. The Electrochemistry of Germanium Nitride with Lithium. *J. Electrochem. Soc.*. **150** (11), A1450-A1456 (2003).
L Andruzzi, W Senaratne, A Hexemer, C Ober, E Kramer. PEG-Based Biostable Surfaces by Controlled Radical Polymerization. *Polymeric Materials: Science & Engineering*, Vol 88, p. 604-605, sponsored by ACS. (2003).
R Bhat, J Genzer, B Chaney, H Sugg, A Liebmann-Vinson. Controlling the Assemblies of Nanoparticles using Molecular and Macromolecular Gradients. *Nanotech.*. **14**, 1145-1152 (2003).
R Bubeck, L Thomas, W Burghardt, S Rendon, A Hexemer, B Hart. Mechanical and Morphological Anisotropy in a Thermotropic Liquid Crystalline Polymer. *12th International Conference on Deformation, Yield, and Fracture of Polymers*, Vol 12, p. 155 - 158, sponsored by The Plastics and Rubber Division of the Institute of Materials, Minerals, and Mining. (2003).
J Genzer, D Fischer, K Efimenko. Combinatorial near-edge x-ray absorption fine structure: Simultaneous determination of molecular orientation and bond concentration on chemically heterogeneous surfaces. *Appl. Phys. Lett.*. **82**, 266 (2003).
J Genzer, K Efimenko, D Fischer. Molecular Orientation and Grafting Density in Semifluorinated Self-Assembled Monolayers of Mono-, Di-, and Trichloro Silanes on Silica Substrates. *Langmuir*. **18**, 9307-9311 (2002).
J Genzer, D Fischer, K Efimenko. Fabricating Two-Dimensional Molecular Gradients via Asymmetric Deformation of Uniformly-Coated Elastomer Sheets. *Advanced Materials*. **15** (18), 1545-1547 (2003).
J Genzer, E Kramer, D Fischer. Application of near-edge absorption fine structure (NEXAFS) to studies of surface molecular orientation of model organic molecules. *J. Appl. Phys.*. **92**, 7070 (2002).

S Kang, M Liang, X Li, F Chiellini, C Ober, E Kramer. Surface Active Block Copolymers (SABC): Biofouling Resistant Coatings from Chemically Modified Polymers. *Polymeric Materials: Science & Engineering*, Vol 84, p. 14-15, sponsored by ACS. (2001).

J Lenhart, R Jones, E Lin, C Soles, W Wu, S Sambasivan, D Goldfarb, M Angelopoulos. Probing Surface and Bulk Chemistry in Resist Films using near-edge x-ray absorption fine structure. *J. Vac. Sci. Technol., B*. **20** (6), 2920-2926 (2002).

Q Li, L Wu, Y Zhu, A Moodenbaugh, G Gu, M Suenaga, Z Ye, D Fischer. Comparitive studies fo MgB2/Mg Nano-composites and press-sintered MgB2 pellets. *IEEE Trans. Appl. Superconductivity*. **13**, 3051-3055 (2003).

X Li. Studies of Block Copolymers in Surface Engineering and Nanotechnology. Ph.D. Thesis. Cornell University, Ithaca. (2003).

G Liu, J Rodriguez, J Hrbek, B Long, D Chen. Interaction of Thiophene with Titania Surfaces. *J. Mol. Catal. A: Chem.*. **202**, 215-227 (2003).

P Liu, J Rodriguez, J Muckerman, J Hrbek. Interaction of CO, O, and S with metal nanoparticles on Au(111): A theoretical study. *Phys. Rev. B*. **67**, 155416-1-155416-10 (2003).

G Long, A Allen, D Black, H Burdette, D Fischer, R Spal, J Woicik. National Institute of Standards and Technology synchrotron radiation facilities for materials science. *J. Res - NIST*. **106**, 1141 (2002).

A Maiti, J Rodriguez, M Law, P Kung, J McKinney, P Yang. SnO2 Nanoribons as NO2 Sensors. *Nano Lett.*. **3**, 1025-1028 (2003).

A Marsh. Mechanisms of Deep Catalytic Oxidation of Aromatic Hydrocarbons on a Platinum Single Crystal Surface. Ph.D. Thesis. University of Michigan, Ann Arbor. (2003).

J McBreen, X Yang, M Balasubramanian, X Sun, H Lee. Synchrotron X-ray Studies of Lithium-Ion Battery Components. *The 43rd Battery Symposium in Japan*, Vol 2I, p. 46, sponsored by The Electrochemical Society of Japan. (2002).

G Meitzner, D Fischer. Distortions of fluoresence yield X-ray absorption spectra due to sample thickness. *Microchem. J.*. **71**, 281 (2002).

C Ober, J Youngblood, L Andruzzi, W Senaratne, X Li, A Hexemer, E Kramer. Block Copolymers as Surface Modifiers: Synthesis, Characterization and Relevance to Fouling Release and Biostability. *Polymeric Materials: Science & Engineering*, Vol 88, p. 612-613, sponsored by ACS. (2003).

D Pospiech, D Jehnichen, A Gottwald, L Häussler, U Scheler, P Friedel, W Kollig, C Ober, X Li, et al.. Investigation of the Microphase Separation in Semifluorinated Polyesters. *Polymeric Materials: Science & Engineering*, Vol 84, p. 314-315, sponsored by ACS. (2001).

J Rodriguez, P Liu, J Dvorak, T Jirsak, J Gomes, Y Takahashi, K Nakamura. Adsorption and decomposition of SO2 on TiC(001): An experimental and theoretical study. *Surf. Sci. Lett.*. **543**, L675-L682 (2003).

J Rodriguez, M Perez, T Jirsak, J Evans, J Hrbek, L Gonzalez. Activation of Au nanoparticles on oxide surfaces: reaction of SO2 with Au/MgO(100). *Chem. Phys. Lett.*. **378**, 526-532 (2003).

J Rodriguez, J Dvorak, T Jirsak, G Liu, J Hrbek, Y Aray, C Gonzalez. Coverage Effects and the Nature of the Metal-Sulfur Bond in S/Au(111): High Resolution Photoemission and Density-Functional Studies. *J. Am. Chem. Soc.*. **125**, 276-285 (2003).

W Senaratne, L Andruzzi, D Holowka, B Ilic, A Hexemer, B Baird, C Ober, E Kramer. Exploring the Potential of Surface Grown PEG-Polymer Brushes for Biotechnology Applications. *Polymeric Materials: Science & Engineering*, Vol 88, p. 337-338 , sponsored by ACS. (2003).

Z Song, T Cai, Z Chang, G Liu, J Rodriguez, J Hrbek. Molecular Level Study of the Formation and the Spread of MoO3 on Au (111) by Scanning Tunneling Microscopy and X-ray Photoelectron Spectroscopy. *J. Am. Chem. Soc.*. **125**, 8059-8066 (2003).

W Wallace, D Fischer. Resonant soft X-ray photofragmentation of propane. *J. Electron. Spectrosc. Relat. Phenom.*. **130**, 1-6 (2003).

T Wu, K Efimenko, P Vlcek, V Subr, J Genzer. Formation and Properties of Anchored Polymers with a Gradual Variation of Grafting Densities on Flat Substrates. *Macromolecules*. **36**, 2448-2453 (2003).

J Youngblood, L Andruzzi, C Ober, A Hexemer, E Kramer, J Callow, J Finley, M Callow. Coatings Based on Side-chain Ether-linked Poly(ethylene glycol) and Fluorocarbon Polymers for the Control of Marine Biofouling. *Biofouling*. **19** (supplement), 91-98 (2003).

**Beamline U8B**

K Miller. C-H and C-C Bond Activations of Organic Molecues by Stable Germylenes. Ph.D. Thesis. University of Michigan, Ann Arbor. (2002).

T Owens, S Süzer, M Banaszak Holl. Variable Energy X-ray Photoemission Studies of Alkylsilane Based Monolayers on Gold. *J. Phys. Chem. B*. **107** (14), 3177-3182 (2003).

K Schneider. Scanning Tunneling Microscopy Investigation of Spherosiloxane- and Alkylsilane-Based Monolayers. Ph.D. Thesis. University of Michigan, Ann Arbor. (2003).

K Schneider, K Nicholson, T Owens, B Orr, M Banaszak Holl. The differential reactivity of octahydridosilsesquioxane on Si(100)-2×1 and Si(111)-7×7: a comparitive experimental study. *Ultramicroscopy*. **97**, 35-43 (2003).

S Süzer, S Sayan, M Banaszak Holl, E Garfunkel, Z Hussain, N Hamdan. Soft X-ray photoemission studies of Hf oxidation. *J. Vac. Sci. Technol., A*. **21** (1), 106-109 (2003).

**Beamline U10A**

D Basov, A Bratkovsky, P Henning, B Zink, F Hellman, Y Wang, C Home, M Strongin. Infrared probe of metal-insulator transition in Si1-xGdx and Si1-xYx amorphous alloys in magnetic field. *Europhys. Lett.*. **57**, 240-246 (2002).

C Bernhard, T Holden, J Humlicek, D Munzar, A Golnik, M Klaser, T Wolf, L Carr, C Homes, et al.. In-plane polarized collective modes in detwined Yba2Cu3O6.95 observed by spectral ellipsometry. *Solid State Commun.*. **121**, 1963-1967 (2002).

C Homes, J Tranquada, Q Li, A Moodenbaugh. Mid-infrared conductivity from mid-gap states associated with charge stripes. *Phys. Rev. B*. **67**, 184516 (2003).
C Homes, Q Li, A Moodenbaugh, P Fournier, R Greene. Infrared optical properties of Pr2CuO4. *Phys. Rev. B: Condens. Matter*. **66**, 144511 (2002).
C Homes, T Vogt, S Shapiro, S Wakimoto, M Subramanian, A Ramirez. Charge transfer in high dielectric constant materials CaCu(3)Ti(4)O(12) and CdCu(3)Ti(4)O(12). *Phys. Rev. B: Condens. Matter*. **67**, 092106 (2003).
J Tu, C Homes, G Gu, D Basov, M Strongin. Optical studies of charge dynamics in the optimally doped Bi2Sr2CaCu2O8+delta. *Phys. Rev. B*. **66**, 144514 (2002).
J Tu, C Homes, G Gu, M Strongin. A systematic optical study of phonon properties in optimally doped Bi2Sr2CaCu2O8+delta. *Physica B*. **316-317**, 324-327 (2002).
G Tzamalis, N Zaidi, C Homes, A Monkman. Doping dependent studies of the Anderson-Mott localization in polyaniline at the metal-insulator boundary. *Phys. Rev. B*. **66**, 085202 (2002).

**Beamline U10B**

D Chidambaram, M Jaime Vasquez, G Halada, C Clayton. Studies on the repassivation behavior of aluminum and aluminum alloy exposed to chromate solutions. *Surf. Interface Anal.*. **35** (2), 226 (2003).
A Eilert, J Sweat, D Wetzel. Parabolic Concentration of Diffusely Transmitted Near-IR Radiation in an Acousto-Optic Tunable Filter Spectrometer. *J. Near Infrared Spectrosc.*. **8**, 239-250 (2000).
C Eng, G Halada, A Francis, C Dodge, J Gillow. Uranium Association with Corroding Carbon Steel Surfaces. *Surf. Interface Anal.*. **35**, 525-535 (2003).
S Federman, L Miller, I Sagi. Following Matrix Metalloproteinases Activity Near the Cell Boundary by Infrared Micro-Spectroscopy. *Matrix Biol.*. **21**, 567-577 (2002).
G Flynn, L Keller. Synchrotron FTIR Examination of Interplanetary Dust Particles: An Effort to Determine the Compounds and Minerals in Interstellar and Circumstellar Dust. *Laboratory Astrophysics Workshop*, Vol NASA CP-2002-211863 , p. 201-203, sponsored by NASA. (2002).
K Gough, D Zielinski, R Wiens, M Rak, I Dixon. Fourier transform infrared evaluation of microscopic scarring in the cardiomyopathic heart: Effect of chronic AT1 suppression. *Anal. Biochem.*. **316**, 232-242 (2003).
R Huang, L Miller, C Carlson, M Chance. FTIR Analysis of Tibia Bone from Ovariectomized Cynomolgus Monkeys (Macaca fascialaris) and the Effect of Nandrolone Deconoate Treatment. *Bone*. **30** (2), 492-497 (2002).
N Jamin, L Miller, J Moncuit, W Fridman, P Dumas, J Teillaud. Chemical Heterogeneity in Cell Death: Combined Synchrotron IR and Fluorescence Microscopy Studies of Single Apoptotic and Necrotic Cells. *Biopolymers*. **72** (5), 366-373 (2003).
V Joshi, R Powell, F Furuya, I Hainfeld. Metal carbonyl clusters as infrared labels for biosensing. *American Chemical Society National Meeting*, Vol Fall 2003, p. Inorg-73, sponsored by American Chemical Society. (2003).
S Judex, S Boyd, Y Qin, L Miller, R Muller, C Rubin. Combining High-Resolution MicroCT with Material Composition to Define the Quality of Bone Tissue. *Curr. Osteoporosis Reports*. **1**, 11-19 (2003).
A Lanzirotti, L Miller. Imaging and Microspectroscopy at the National Synchrotron Light Source. *Synch. Rad. News*. **15** (6), 17-26 (2003).
Y Mei, L Miller, W Gao, R Gross. Imaging the Distribution and Secondary Structure of Immobilized Enzymes using Infrared Microspectroscopy. *Biomacromolecules*. **4** (1), 70-74 (2003).
L Miller, P Dumas, N Jamin, J Teillaud, J Miklossy, L Forro. Combining IR Spectroscopy and Fluorescence Imaging in a Single Microscope: Biomedical Applications using a Synchrotron Infrared Source. *Rev. Sci. Instrum.*. **73**, 1357-1360 (2002).
L Miller, G Smith, G Carr. Synchrotron-based Biological Microspectroscopy: From the Mid- to the Far-Infrared Regimes. *J. Biol. Phys.*. **29** (1), 219-230 (2003).
L Miller, T Tague. Development and Biomedical Applications of Fluorescence-assisted Synchrotron Infrared Micro-Spectroscopy. *Vib. Spectrosc.*. **849**, 1-7 (2002).
J Radel, J Homan, D Wallace, D Wetzel, S LeVine. FT-IR Microspectroscopic Chemical Analysis of Photoreceptor Outer Segment Changes Resulting from Oxidative Stress. *Invest. Opht. Vis. Sci.*. **41** (4), S23 (2000).
D Wetzel, P Srivarin, J Finney. Revealing Protein Infrared Spectral Detail in a Heterogenous Matrix Dominated by Starch. *Vib. Spectrosc.*. **31**, 109-114 (2003).
D Wetzel, S LeVine. Biological Applications of Infrared Microspectroscopy. *Infrared and Raman Spectroscopy of Biological Materials*, p. 101-142, Marcel Dekkar, New York. (2000).
D Wetzel, J Reffner. Infrared Spectroscopy goes Microscopic. *Chem. Ind.*. **9** (8), 308-313 (2000).
P Yu, J McKinnon, C Christensen, D Christensen, N Marinkovic, L Miller. Chemical Imaging of Micro-Structures of Plant Tissues within Cellular Dimension Using Synchrotron Infrared Microspectroscopy. *J. Agr. Food Chem.*. **51** (20), 6062-6067 (2003).

**Beamline U12A**

K Adib, D Mullins, G Totir, N Camillone III, J Fitts, K Rim, G Flynn, R Osgood Jr. Dissociative adsorption of CCl4 on the Fe3O4(111)-(2x2) selvedge of alpha-Fe2O3(0001). *Surf. Sci.*. **524**, 113-128 (2003).

**Beamline U12IR**

S Kramer, B Podobedov. Coherent Microwave Synchrotron Radiation in the VUV Ring. *Proceedings of Eighth European Particle Accelerator Conference (EPAC'02)*, Vol , p. 1523, sponsored by EPAC-02. (2002).

**Beamline U13UB**

K Smith, J Xue, L Duda, A Fedorov, P Johnson, S Hulbert, W McCarroll, M Greenblatt. Recent high resolution photoemission studies of electronic structure in quasi-one dimensional conductors. *J. Electron. Spectrosc. Relat. Phenom.*. **117-118**, 517-526 (2001).

B Wells, Z Yusof, T Valla, A Fedorov, P Johnson, C Dendziora, S Jian, D Hinks. ARPES evidence for a quasiparticle liquid in overdoped Bi2Sr2CaCu2O8+delta. *Surf. Rev. Lett.*. **9** (2), 1091-1096 (2001).

**Beamline X1A1**

T Beetz, C Jacobsen. Soft X-ray Radiation-Damage Studies in PMMA using a Cryo-STXM. *J. Synch. Rad.*. **105**, 280-283 (2003).

G Flynn, L Keller, S Wirick, C Jacobsen, S Sutton. Analysis of interplanetary dust particles by soft and hard x-ray microscopy. *J. Phys. IV*. **104**, 367-372 (2003).

A Kilcoyne, T Tyliszczak, W Steele, S Fakra, P Hitchcock, K Franck, E Anderson, B Harteneck, E Rightor, et al. Interferometer-Controlled Scanning Transmission X-ray Microscopes at the Advanced Light Source. *J. Synch. Rad.*. **108**, 125-136 (2003).

J Rothe, M Plaschke, M Denecke. Soft x-ray spectromicroscopy investigation of the formation and ageing of Eu(III)-induced humic acid aggregates. *J. Phys. IV*. **104**, 421-424 (2003).

T Schaefer, F Claret, A Bauer, L Griffault, E Ferrage, B Lanson. Natural organic matter (NOM)-clay association and impact on Callovo-Oxfordian clay stability in high alkaline solution: Spectromicroscopic evidence. *J. Phys. IV*. **104**, 413-416 (2003).

T Schaefer, N Hertkorn, R Artinger, F Claret, A Bauer. Functional group analysis of natural organic colloids and clay association kinetics using C(1s) spectromicroscopy. *J. Phys. IV*. **104**, 409-412 (2003).

S Urquhart, H Ade. Trends in the Carbonyl Core (C 1s, O 1s) ® p*C=O Transition in the Near Edge X-ray Absorption Fine Structure Spectra of Organic Molecules. *J. Phys. Chem. B*. **106**, 8531-8538 (2002).

**Beamline X1A2**

T Schaefer, F Claret, A Bauer, L Griffault, E Ferrage, B Lanson. Natural organic matter (NOM)-clay association and impact on Callovo-Oxfordian clay stability in high alkaline solution: Spectromicroscopic evidence. *J. Phys. IV*. **104**, 413-416 (2003).

T Schaefer, N Hertkorn, R Artinger, F Claret, A Bauer. Functional group analysis of natural organic colloids and clay association kinetics using C(1s) spectromicroscopy. *J. Phys. IV*. **104**, 409-412 (2003).

**Beamline X1B**

T Beetz, C Jacobsen, C Kao, J Kirz, T Mentes, C Sanchez-Hanke, D Sayre, D Shapiro. Development of a Novel Apparatus for Experiments in Soft X-ray Diffraction Imaging and Diffraction Tomography. *J. Phys. IV*. **104**, 31-34 (2003).

U Hergenhahn, A Rüdel, K Maier, A Bradshaw, R Fink, A Wen. The Resonant Auger Spectra of Formic Acid, Acetaldehyde, Acetic Acid and Methyl formate. *Chem. Phys.*. **289**, 57-67 (2003).

C McGuinness, D Fu, J Downes, K Smith, G Hughes, J Roche. Electronic structure of thin film silicon oxynitrides measured using soft x-ray emission and absorption. *J. Appl. Phys.*. **94** (6), 3919-3922 (2003).

C McGuinness, J Downes, P Ryan, K Smith, D Doppalapudi, T Moustakas. X-ray Spectroscopic Studies of the Bulk Electronic Structure of InGaN Alloys. *GaN and Related Alloys, MRS Fall 2002 Meeting*, Vol 743, p. L10_11, sponsored by Materials Research Society. (2003).

**Beamline X2B**

R Seright, J Liang, B Lindquist, J Dunsmuir. Use of X-ray computed microtomography to understand why gels reduce relative permeability to water more than that to oil. *J. Petrol. Sci. Eng.*. **39**, 217-230 (2003).

**Beamline X3A1**

I Novozhilova, A Volkov, P Coppens. Theoretical Analysis of the Triplet Excited State of the [Pt2(H2P2O5)4]4- Ion and Comparison with Time-Resolved X-ray and Spectroscopic Results. *J. Am. Chem. Soc.*. **125**, 1079-1087 (2003).

J Overgaard, F Larsen, B Schiott, B Iverson. Electron Density Distributions of Redox Active Mixed Valence Carboxylate Bridged Trinuclear Iron Complexes. *J. Am. Chem. Soc.*. **125**, 11088-11099 (2003).

S Pillet, G Wu, V Kulsomphob, B Harvey, R Ernst, P Coppens. Investigation of Zr-C, Zr-N, and Potential Agostic Interactions in an Organozirconium Complex by Experimental Electron Density Analysis. *J. Am. Chem. Soc.*. **125**, 1937-1949 (2003).

**Beamline X3A2**

P Agarwal, R Somani, W Weng, A Mehta, L Yang, S Ran, L Liu, B Hsiao. Shear-Induced Crystallization in Novel Long Chain Branched Polypropylenes by in Situ Rheo-SAXS and -WAXD. *Macromolecules*. **36**, 5226-5235 (2003).

A Nogales, I Sics, T Ezquerra, Z Denchev, F Balta Calleja, B Hsiao. In-Situ Simultaneous Small- and Wide-Angle X-ray Scattering Study of Poly(ether ester) during Cold Drawing. *Macromolecules*. **36**, 4827-4832 (2003).

S Ran, Z Wang, C Burger, B Chu, B Hsiao. Mesophase as the Precursor for Strain-Induced Crystallization in Amorphous Poly(ethylene terephthalate) Film. *Macromolecules*. **35**, 10102-10107 (2002).

R Somani, L Yang, B Hsiao, P Agarwal, H Fruitwala, A Tsou. Shear-Induced Precursor Structures in Isotactic Polypropylene Melt by in-Situ Rheo-SAXS

and Rheo-WAXD Studies. *Macromolecules*. **35**, 9096-9104 (2002).

**Beamline X3B1**

M Bushey, T Nguyen, C Nuckolls. Synthesis, Self-Assembly, and Switching of One-Dimensional Nanostructures from New Crowded Aromatics. *J. Am. Chem. Soc.*. **125**, 8264-8269 (2003).

M Colle, R Dinnebier, W Brutting. The structure of the blue luminescent delta phase of tris(8-hydroxyquinoline)aluminum(III) (Alq3). *Chem. Commun.*. **2002**, 2908-2909 (2002).

R Dinnebier, S Vensky, M Panthöfer, M Jansen. Crystal and Molecular Structures of Alkali Oxalates - First Proof of a Staggered Oxalate Anion in the Solid State. *Z. Kristallogr.*. (Suppl. Iss. 20), 86 (2003).

R Dinnebier, S Vensky, M Panthöfer, M Jansen. Crystal and Molecular Structures of Alkali Oxalates: First Proof of a Staggered Oxalate Anion in the Solid State. *Inorg. Chem.*. **42** (5), 1499-1507 (2003).

A Le Bail, P Stephens, H Hubert. A crystal structure for the souzalite/gormanite series from synchrotron powder diffraction data. *Eur. J. Mineral.*. **15** (4), 719-723 (2003).

O Omotoso, R Mikula, P Stephens. Surface area of interstratified phyllosilicates in Athabasca oil sands from synchrotron XRD. *Advances in X-ray Analysis*, Vol 54, p. 391-396, sponsored by International Centre for Diffraction Data. (2002).

M Rajeswaran, T Blanton, N Zumbulyadis, D Giesen, C Conesa-Moratilla, S Misture, P Stephens, A Huq. Three-dimensional Structure Determination of N-(p-Tolyl)-dodecylsulfonamide from Powder Diffraction Data and Validation of Structure using Solid-State NMR Spectroscopy. *J. Am. Chem. Soc.*. **124**, 14450-14459 (2002).

M Viola, M Martinez-Lopez, J Alonso, J Martinez, J De Paoli, S Pagola, J Pedregosa, M Fernandez-Diaz, R Carbonio. Structure and Magnetic Properties of Sr2CoWO6: An Ordered Double Perovskite Containing Co2+(HS) with Unquenched Orbital Magnetic Moment. *Chem. Mater.*. **15**, 1655-1663 (2003).

**Beamline X4A**

M Aittaleb, R Rashid, Q Chen, J Palmer, C Daniels, H Li. Structure and Function of Archaeal Box C/D sRNP Core Proteins. *Nat. Struct. Biol.*. **106** (45), 256 (2003).

N Armstrong, M Mayer, E Gouaux. Tuning activation of the AMPA-sensitive GluR2 ion channel by genetic adjustment of agonist-induced conformational changes. *Proc Natl Acad Sci USA*. **100** (10), 5736-5741 (2003).

Y Chi, J Frantz, B Oh, L Hansen, S Shoelson. Diabetes mutations delineate an atypical POU domain in HNF1a.. *Mol. Cell*. **10**, 1129 (2002).

H Cho, K Mason, K Ramyar, A Stanley, S Gabelli, D Denney, D Leahy. Structure of the Extracellular Region of HER2 Alone and in Complex with the Herceptin Fab. *Nature*. **421**, 756-760 (2003).

N Friedland, H Liou, P Lobel, A Stock. Structure of a Cholesterol-Binding Protein Deficient in Niemann-Pick Type C2 Disease. *Proc Natl Acad Sci USA*. **100** (5), 2512-2517 (2003).

H Furukawa, E Gouaux. Mechanisms of activation, inhibition and specificity: crystal structures of the NMDA receptor NR1 ligand-binding core. *EMBO J.*. **22** (12), 2873-2885 (2003).

A Gogos, L Shapiro. Large Conformational Changes in the Catalytic Cycle of Glutathione Synthase. *Structure*. **10** (12), 1669-1676 (2002).

J Hunt, J Deisenhofer. Ping-Pong Cross-Validation in Real Space: a Method for Increasing the Phasing Power of a Partial Model Without Risk of Model Bias. *Acta Cryst. D*. **59**, 214-224 (2003).

R Jin, M Horning, M Mayer, E Gouaux. Mechanism of Activation and Selectivity in a Ligand-Gated Ion Channel: Structural and Functional Studies of GluR2 and Quisqualate. *Biochemistry*. **41**, 15635-15643 (2002).

R Jin, E Gouaux. Probing the Function, Conformational Plasticity, and Dimer-Dimer Contacts of the G1uR2 Ligand-Binding Core: Studies of 5-Substituted Willardiines and G1uR2 S1S2 in the Crystal. *Biochemistry*. **42**, 5201-5213 (2003).

G Jogl, L Tong. Crystal Structure of Carnitine Acetyltransferase and Implications for the Catalytic Mechanism and Fatty Acid Transport. *Cell*. **112**, 113-122 (2003).

Z Juo, G Kassavetis, J Wang, E Geiduschek, P Sigler. Crystal structure of a transcription factor IIIB core interface ternary complex. *Nature*. **422**, 534-539 (2003).

R Khayat, R Batra, C Qian, T Halmos, M Bailey, L Tong. Structural and Biochemical Studies of Inhibitor Binding to Human Cytomegalovirus Protease. *Biochemistry*. **42**, 885-891 (2003).

S Lahiri, G Zhang, D Dunaway-Mariano, K Allen. The Pentacovalent Phosphorus Intermediate of a Phosphoryl Transfer Reaction. *Science*. **299**, 2067 (2003).

I Levchenko, R Grant, D Wah, R Sauer, T Baker. Structure of a Delivery Protein for an AAA+ Protease in Complex with a Peptide Degradation Tag. *Mol. Cell*. **12**, 365-372 (2003).

S Majeed, G Ofek, A Belachew, C Huang, T Zhou, P Kwong. Enhancing Protein Crystallization Through Precipitant Synergy. *Structure*. **11**, 1061-1070 (2003).

Y Mao, J Chen, J Maynard, B Zhang, F Quiocho. A Novel A; Helix Fold of the AP180 Amino-Terminal Domain for Phoshoinositide. *Cell*. **104**, 433-440 (2001).

K Murthy, S Smith, V Ganesh, K Judge, N Mullin, P Barlow, C Ogata, G Kotwal. Crystal Structure of a Complement Control Protein that Regulates Both Pathways of Complement Activation and Binds Heparan Sulfate Proteoglycans. *Cell*. **104**, 301-311 (2001).

R Nagem, D Colau, L Dumoutier, J Renauld, C Ogata, I Polikarpov. Crystal Structure of Recombinant Human Interleukin-22. *Structure*. **10**, 1051-1062 (2002).

V Robinson, T Wu, A Stock. Structural analysis of the domain interface in DrrB, a response regulator of the OmpR/PhoB subfamily. *J. Bacteriol.*. **185** (14), 4186-4194 (2003).

V Robinson, J Hwang, E Fox, M Inouye, A Stock. Domain Arrangement of Der, a Switch Protein

Containing Two GTPase Domains.. *Structure*. **10** (12), 1649 (2002).
S Santagata, T Boggon, C Baird, C Gomez, J Zhao, W Shan, D Myszka, L Shapiro. G-Protein Signaling Through Tubby Proteins. *Science*. **292**, 2041-2050 (2001).
T Schwartz, G Blobel. Structural Basis for the Function of the beta Subunit of the Eukaryotic Signal Recognition Particle Receptor. *Cell*. **112** (6), 793-803 (2003).
I Shumilin, R Bauerle, R Kretsinger. The High-Resolution Structure of 3-Deoxy-D-arabino-heptulosonate-7-phosphate Synthase Reveals a Twist in the Plane of Bound Phosphoenolypyruvate. *Biochemistry*. **42**, 3766-3776 (2003).
S Sia, P Carr, A Cochran, V Malashkevich, P Kim. Short Constrained Peptides that Inhibit HIV-1 Entry. *Proc Natl Acad Sci USA*. **99** (23), 14664-14669 (2002).
X Tao, Y Xu, Y Zhang, A Beg, L Tong. An Extensively Associated Dimer in the Structure of the C713S Mutant of the TIR Domain of Human TLR2. *Biochem. Biophys. Res. Commun.*. **299**, 216-221 (2002).
A VanDemark, R Hofmann, C Tsui, C Pickart, C Wolberger. Molecular Insights into Polyubiquitin Chain Assembly:Crystal Structure of the Mms2/Ubc13 Heterodimer. *Cell*. **105**, 711-720 (2001).
H Yamaguchi, H Matsushita, A Nairn, J Kuriyan. Crystal Structure of the Atypical Protein Kinase Domain of a TRP Channel with Phophtransferase activity. *Mol. Cell*. **7**, 1047-1057 (2001).
B Yeh, M Igarashi, A Eliseenkova, A Plotnikov, I Sher, D Ron, S Aaronson, M Mohammadi. Structural Basis by Which Alternative Splicing Confers Specificity in Fibroblast Growth Factor Receptors. *Proc Natl Acad Sci USA*. **100** (5), 2266-2271 (2003).
Y Yuan, O Martsinkevich, J Hunt. Structural Characterizatin of an MJ1267 ATP-Binding Cassette Crystal with a Complex Pattern Twinning Caused by Promiscuous Fiber Packing. *Acta Cryst. D*. **59**, 225-238 (2003).
H Zhang, Z Yang, Y Shen, L Tong. Crystal Structure of the Carboxyltransferase Domain of Acetyl-Coenzyme A Carboxylase. *Science*. **299**, 2064 (2003).

**Beamline X6A**

J James, C Escalante, M Yoon-Robarts, T Edwards, R Linden, A Aggarwai. Crystal Structure of the SF3 Helicase from Adeno-Associated Virus Type 2. *Structure*. **11**, 1025-1035 (2003).
L Kang, S Gabelli, M Bianchet, W Xu, M Bessman, L Amzel. Structure of a coenzyme A pyrophosphatase from Deinococcus radiodurans: a member of the Nudix family. *J. Bacteriol.*. **185** (14), 4110-9 (2003).

**Beamline X6B**

A Mateja, Y Devedjiev, D Krowarsch, K Longenecker, Z Dauter, J Otlewski, Z Derewenda. The Impact of Glu>Ala and Glu>Asp Mutations on the Crystallization Properties of RhoGDI: The Structure of RhoGDI at 1.3 A Resolution. *Acta Cryst. D*. **58**, 1983-1991 (2002).

**Beamline X7A**

P Barnes, P Woodward, Y Lee, T Vogt, J Hriljac. Pressure-Induced Cation Migration and Volume Expansion in the Defect Pyrochlores ANbWO6 (A = NH4+, Rb+, H+m K+). *J. Am. Chem. Soc.*. **125**, 4572-4579 (2003).
A Burton, S Elomari, R Medrud, I Chan, C Chen, L Bull, E Vittoratos. The Synthesis, Characterization, and Structure Solution of SSZ-58: A Novel Two-Dimensional 10-Ring Pore Zeolite with Previously Unseen Double 5-Ring Subunits. *J. Am. Chem. Soc.*. **125**, 1633-1642 (2003).
W Dmowski, T Egami, K Swider-Lyons, C Love, D Rolison. Local Atomic Structure and Conduction Mechanism of Nanocrystalline Hydrous RuO2 from X-ray Scattering. *J. Phys. Chem. B*. **106**, 12677-12683 (2002).
E Irran, B Juergens, W Schnick. Synthesis, Crystal Structure Determination from X-ray Powder Diffractometry and Vibrational Spectroscopy of the Tricyanomelaminate Monohydrates M3[C6N9].H2O (M=K,Rb). *Solid State Sci.*. **4**, 1305-1311 (2002).
H Jeong, S Nair, T Vogt, L Dickinson, M Tsapatsis. A highly crystalline layered silicate with three dimensionally microporous layers. *Nat. Mater.*. **2**, 53-58 (2003).
J Lai, K Shafi, K Loos, A Ulman, Y Lee, T Vogt, C Estrones. Doping gamma-Fe2O3 Nanoparticles with Mn(III) Suppresses the Transition to the alpha-Fe2O3 Structure. *J. Am. Chem. Soc.*. **125**, 11470-11471 (2003).
Y Lee, D Mitzi, P Barnes, T Vogt. Pressure-Induced Phase Transitions and Templating Effect in Three-Dimensional Organic-Inorganic Hybrid Perovskites. *Phys. Rev. B: Condens. Matter*. **68**, 020103R (2003).
Y Lee, T Vogt, J Hriljac, J Parise, J Hanson, S Kim. Non-Framework Cation Migration and Irreversible Pressure-induced Hydration in a Zeolite. *Nature*. **420**, 485 (2002).
N Pereira, M Balasubramanian, L Dupont, J McBreen, L Klein, G Amatucci. The Electrochemistry of Germanium Nitride with Lithium. *J. Electrochem. Soc.*. **150** (8), A1118-A1128 (2003).
V Petkov, S Billinge, T Vogt, A Ichimura, J Dye. Structure of Intercalated Cs in Zeolite ITQ-4:An Array of Metal Ions and Correlated Electrons Confined in a Pseudo-1D Nanoporous Host. *Phys. Rev. Lett.*. **89**, 075502 (2002).
V Petkov, S Billinge, P Larson, S Mahanti, T Vogt, K Rangan, M Kanatzidis. Structure of Nanocrystalline Materials using Atomic Pair Distribution Function Analysis: Study of LiMoS2. *Phys. Rev. B*. **65**, 092105 (2002).
T Vogt, J Hriljac, N Hyatt, P Woodward. Pressure-induced intermediate-to-low spin state transition in LOaCoO3. *Phys. Rev. B*. **67**, 140401-1 - 140401-4 (2003).
X Yang, J McBreen, W Yoon, M Yoshio, H Wang, K Fukuda, T Umeno. Structural Studies of the New Carbon Coated Silicon Anode Using Synchrotron Based In Situ XRD. *Electrochem. Commun.*. **4** (11), 893-897 (2002).

**Beamline X7B**

A Christensen, T Jensen, N Scarlett, I Madsen. n-situ X-ray powder diffraction studies of hydrothermal and themal decomposition reactions of basic bismuth(III) nitrates in the temperature range 20-650C. *Dalton Trans.*. **16**, 3278-3282 (2003).

A Christensen, N Scarlett, I Madsen, T Jensen, J Hanson. Real Time study of cement and clinker phases hydration. *Dalton Trans.*. **2003**, 1529-1536 (2003).

P Chupas, D Corbin, V Rao, J Hanson, C Grey. A Combined Solid-State NMR and Diffraction Study of the Structures and Acidity of Fluorinated Aluminas: Implications for Catalysis. *J. Phys. Chem. B*. **107**, 8327-8336 (2003).

P Devi, Y Lee, J Margolis, J Parise, S Samath, H Herman, J Hanson. Comparison of citrate-nitrate gel combustion and precursor plasma spray processes for the synthesis of yttrium aluminum garnet. *J. Mater. Res.*. **17**, 2846-2851 (2002).

G Evans, R Fureaux, G Gainsford, J Hanson, G Kicska, A Sauve, V Schram, P Tyler. "8-Aza-Immuncillins as Transition State analogue Inhibitors of Purine Nucleoside Phosphorylase and Nucleoside Hydrolases. *J. Med. Chem.*. **46**, 155-160 (2003).

M Khoudiakov, A Parise, B Brunschwig. Interfacial Electron Transfer in FeII(CN)64-Sensitized TiO2 Nanoparticles: A Study of Direct Charge Injection by Electroabsorption Spectroscopy. *J. Am. Chem. Soc.*. **125**, 4637-4642 (2003).

J Kim, J Rodriquez, J Hanson, A Frenkel, P Lee. Reduction of CuO and Cu2O with H2: H Embedding and Kinetic Effects in the Formation of Suboxides. *J. Am. Chem. Soc.*. **125**, 10684-16092 (2003).

J Post, P Heany, J Hanson. Synchrotron x-ray diffraction study of the structure and dehydration behavior of todorokite. *Am. Mineral.*. **88**, 141-151 (2003).

J Post, P Heaney, R Von Dreele, J Hanson. Neutron and temperature-resolved synchrotron X-ray powder diffraction study of akaganeite. *Am. Mineral.*. **88**, 782-788 (2003).

J Rodriguez, X Wang, J Hanson, G Liu, A Iglesias-Juez, M Fernandez-Garcia. The behavior of mixed-metal oxides: Structural and electronic properties of Ce-Ca oxides. *J. Chem. Phys.*. **119**, 5659-5669 (2003).

J Rodriguez, J Kim, J Hanson, M Perez, A Frenkel. Reduction of CuO in H2: In Situ Time-Resolved XRD Studies. *Catal. Lett.*. **85**, 247-254 (2003).

J Rodriguez, J Kim, J Hanson, J Brito. Reduction of CoMoO4 and NiMoO4: In situ Time-Resolved XRD Studies. *Catal. Lett.*. **82** (1-2), 103-109 (2002).

J Rodriguez, J Kim, J Hanson, S Sawhill, M Bussell. Physical and Chemical Properties of MoP, Ni2P, and MoNiP Hydrodesulfurization Catalysts: Time-Resolved X-ray Diffractin, Density Functional, and Hydrodesulfurization Activity Studies. *J. Phys. Chem. B*. **107**, 6276-6285 (2003).

R Sullivan, H Liu, D Smith, J Hanson, D Osterhout, M Ciraolo, C Grey, J Martin. Sorptive Reconstruction of the CuAlCl4 Framework upon Reversible Ethylene Binding. *J. Am. Chem. Soc.*. **125**, 11065-11079 (2003).

J Wang, S Brankovic, Y Zhu, J Hanson, R Adzic. Kinetic Characterization of PtRu Fuel Cell Anode Catalysts Made by Spontaneous Pt Decomposition on Ru Nanoparticles. *J. Electrochem. Soc.*. **150**, a1108-a1117 (2003).

**Beamline X8C**

I Bosanac, J Alattia, T Mal, J Chan, S Talarico, F Tong, K Tong, F Yoshikawa, T Furuichi, et al. Structure of the Inositol 1,4,5-trisphosphate Receptor Binding Core in Complex with its Ligand. *Nature*. **420**, 696 (2002).

J Elam, A Taylor, R Strange, S Antonyuk, P Doucette, J Rodriguez, S Hasnain, L Hayward, J Selverston Valentine, et al. Amyloid-like Filaments and Water-filled Nanotubes formed by SOD1 Mutant Proteins Linked to Familial ALS. *Nat. Struct. Biol.*. **10** (6), 461-467 (2003).

S Eswaramoorthy, S Gerchman, V Graziano, H Kycia, F Studier, S Swaminathan. Structure of a Yeast Hypothetical Protein Selected by a Structural Genomics Approach. *Acta Cryst. D*. **59**, 127-135 (2003).

J Jiang, A Taylor, K Prasad, Y Ishikawa-Brush, P Hart, E Lafer, R Sousa. Structure-Function Analysis of the Auxilin J-Domain Reveals an Extended Hsc70 Interaction Interface. *Biochemistry*. **42**, 5748-5753 (2003).

V Kacer, S Scaringe, J Scarsdale, J Rife. Crystal Structures of r(GGUCACAGCCC)2. *Acta Cryst. D*. **59**, 423-432 (2003).

C Kerfeld, M Sawaya, V Brahmandam, D Cascio, K Ho, C Trevithick-Sutton, D Krogmann, T Yeates. The Crystal Structure of a Cyanobacterial Water-Soluble Carotenoid Binding Protein. *Structure*. **11**, 55-65 (2003).

P Kongsaeree, C Samanchart, P Laowanapiban, S Wiyakrutta, V Meevootisom. Crystallization and Preliminary X-ray Crystallographic Analysis of D-Phenylglycine Aminotransferase from Pseudomonas Stutzeri ST201. *Acta Cryst. D*. **59**, 953-954 (2003).

P Lario, A Vrielink. Sub-atomic resolution crystal structure of cholesterol oxidase: what atomic resolution crystallography reveals about enzyme mechanism and the role of the FAD cofactor in redox activity.. *J. Mol. Biol.*. **326** (5), 1635-50 (2003).

Y Lee, S Nadaraia, D Gu, D Becker, J Tanner. Structure of the Proline Dehydrogenase Domain of the Multifunctional PutA Flavoprotein. *Nat. Struct. Biol.*. **10** (2), 109 (2003).

J Liu, A Dermatakis, C Lukacs, F Konzelmann, Y Chen, U Kammlott, W Depinto, H Yang, X Yin, et al.. 3,5,6-Trisubstituted naphthostyrils as CDK2 inhibitors.. *BioOrg. Med. Chem.*. **13** (15), 2465-8 (2003).

C Mura, M Philips, A Kozhukhovsky, D Eisenberg. Structure and assembly of an augmented Sm-like archaeal protein 14-mer. *Proc Natl Acad Sci USA*. **100** (8), 4539-4544 (2003).

V Namboodiri, S Dutta, I Akey, J Head, C Akey. The Crystal Structure of Drosophila NLP-Core Porvids Insight into Pentamer Formation and Histone Binding. *Structure*. **11**, 175-186 (2003).

G Pal, T DeVeyra, J Elce, Z Jia. Purification, Crystallization and Preliminary X-ray Analysis of a u-like Calpain. *Acta Cryst. D*. **59**, 369-371 (2003).

X Qian, C Guan, H Guo. A Dual Role for an Aspartic Acid in Glycosylasparaginase Autoproteolysis. *Structure*. **11**, 997-1003 (2003).

M Sam, D Cascio, R Johnson, R Clubb. Crystallization and Prelimnary X-ray Crystallographic Analysis of the Excisionase-DNA Complex from Bacteriophage. *Acta Cryst. D*. **59**, 1238-1240 (2003).

X Yang, Y Hu, D Yin, M Turner, M Wang, R Borchardt, P Howell, K Kuczera, R Schowen. Catalytic Strategy of S-Adenosyl-L-homocysteine Hydrolase: Transition-State Stabilization and the Avoidance of Abortive Reactions. *Biochemistry*. **42**, 1900-1909 (2003).

J Yang, M Park, G Waldo, S Suh. Directed Evolution Approach to a Structural Genomics Project: Rv2002 from Mycobacterium tuberculosis. *Proc Natl Acad Sci USA*. **100** (2), 455-460 (2003).

Z Yang, C Lanks, L Tong. Molecular Mechanism for the Regulation of Human Mitochondrial NAD(P)+ - Dependent Malic Enzyme by ATP and Fumarate. *Structure*. **10**, 951-960 (2002).

**Beamline X9A**

C Albermann, A Soriano, J Jiang, H Vollmer, J Biggins, W Barton, J Lesniak, D Nikolov, J Thorson. Substrate Specificity of NovM: Implications for Novobiocin Biosynthesis and Glycorandomization. *Org. Lett.*. **5**, 933-936 (2003).

W Barton, B Liu, D Tzvetkova, P Jeffreey, A Fournier, D Sah, R Cate, S Strittmatter, D Nikolov. Structure and Axon Outgrowth Inhibitor Binding of the Nogo-66 Receptor and Related Proteins. *EMBO J.*. **22**, 3291-3302 (2003).

A Bobkov, A Muhlrad, K Kokabi, S Vorobiev, S Almo, E Reisler. Structural Effects of Cofilin on Longitudinal Contacts in F-Actin. *J. Mol. Biol.*. **323**, 739-750 (2002).

J Bonanno, S Burley. Structural Genomics of Proteins Contributing to Conserved Biochemical Pathways/Processes. *Curr. Opin. Struct. Biol.*. **12**, 383-391 (2002).

S Burley, J Bonanno. Structural Genomics. *Structural Bioinformatics*, p. 591-612, Academic Press, New York. (2002).

S Burley, J Bonanno. Structuring the Universe of Proteins. *Annu. Rev. Genomics and Human Genetics*. **3**, 243-262 (2002).

F Burling, R Kniewel, J Buglino, T Chadha, A Beckwith, C Lima. Structure of Escherichia Coli Uridine Phosphorylase at 2.0 Angstrom. *Acta Cryst. D*. **59**, 73-76 (2003).

E Campbell, J Tupy, T Gruber, S Wang, M Sharp, C Gross, S Darst. Crystal Structure of Escherichia Coli E with the Cytoplasmic Domain of its anti-RseA. *Mol. Cell*. **11**, 1067-078 (2003).

W Chan, S Roderick, D Cohen. Human Phosphatidylcholine Transfer Protein: Purification, Crystallization and Preliminary X-ray Diffraction. *Biochim Biophys Acta*. **1596** ( 1), 1-5 (2002).

J Coyle, D Nikolov. GABARAP: Lessons for Synaptogenesis. *The Neuroscientist*. **9**, 205-216 (2003).

A Deaconescu, A Roll-Mecak, S Gerchman, H Kycia, F Studier, J Bonanno, S Burley. X-Ray Structure of Saccharomyces Cerevisiae Homologous Mitochondrial Matrix Factor 1 (Hmf1). *Proteins: Struc. Func. Genet.*. **48**, 431-436 (2002).

J Dewan, A Feeling-Taylor, Y Puius, L Patskovska, Y Patskovsky, R Nagel, S Almo, R Hirsch. Structure of Mutant Human Carbonmonoxyhemoglobin C (betaE6K) at 2.0 A Resolution. *Acta Cryst. D*. **58**, 2038-2042 (2002).

C Fabrega, S Shuman, C Lima. Structure of Candida Albicans mRNA Guanylytransferase Bound to Phosphorylated CTD of RNA Polymerase II. *Mol. Cell*. **11**, 1549-1561 (2003).

C Groft, S Burley. Recognition of eIF4G by Rotavirus NSP3 Reveals a Basis for mRNA Circularization. *Mol. Cell*. **6**, 1273-1283 (2002).

J Himanen, D Nikolov. In Focus: Eph Receptors and Ephrins. *N/A*. **35**, 130-134 (2003).

J Himanen, D Nikolov. Eph Receptors and Ephrins a Structural View. *Trends Neurosci.*. **26**, 46-51 (2003).

W Joo, P Jeffrey, S Cantor, M Finnin, D Livingston, N Pavletich. Structure of the 53BP1 BRCT Region Bound to p53 and its Comparison to the Brcal BRCT Structure. *Genes Dev.*. **16**, 583-593 (2002).

K Kamada, F Hanoaka, S Burley. Crystal Structure of the MazE/MazF Complex: Molecular Bases of Antidote-Toxin Recognition. *Mol. Cell*. **11**, 875-884 (2003).

K Kamada, R Roeder, S Burley. Molecular Mechanism of Recruitment of TFIIF - Associating RNA Polymerase C-Terminal Domain Phosphatase (FCP1) by Transcription Factor IIF. *Proc Natl Acad Sci USA*. **100** (5), 2296-2299 (2003).

G Kicska, P Tyler, G Evans, R Furneaux, W Shi, A Fedorov, A Lewandowicz, S Cahill, S Almo, V Schramm. Atomic Dissection of the Hydrogen Bond Network for Transition-State Analogue Binding to Purine Nucleoside Phosphorylase. *Biochemistry*. **41**, 14489-14498 (2002).

R Kniewel, J Buglino, V Shen, T Chadna, A Beckwith, C Lima. Structural Analysis of Saccharomyces Cerevisiae Myo-Inositol Phosphate Synthase. *J. Struct. Funct. Genomics*. **3**, 129-134 (2002).

A Larsson, R Andersson, J Stahlberg, L Kenne, T Jones. Dextranase from Penicillium minioluteum: Reactin Course, Crystal Structure, and Product Complex. *Structure*. **11**, 1111-1121 (2003).

J Lesniak, W Barton, D Nikolov. Structural and Functional Characterization of the Pseudomonas Hydroperoxide Resistance Protein Ohr. *EMBO J.*. **21** (24), 6649-6659 (2002).

A Lewandowicz, W Shi, G Evans, P Tyler, R Furneaux, L Basso, D Santos, S Almo, V Schramm. Over-the-Barrier Transition State Analogues and Crystal Structure with Mycobacterium Tuberculosis Purine Nucleoside Phosphorylase. *Biochemistry*. **42**, 6057-6066 (2003).

M Lilic, V Galkin, A Orlova, M VanLoock, E Egelman, C Stebbins. Salmonella SipA Polymerizes Actin by Stapling Filaments with Nonglobular Protein Arms. *Science*. **301**, 1918-1921 (2003).

E Mossessova, L Bickford, J Goldberg. SNARE Selectivity of the COPII Coat. *Cell*. **114**, 483-495 (2003).

S Nair, S Burley. X-ray Structures of Myc-Max and Mad-Max Recognizing DNA: Molecular Bases of Regulation by Proto-Oncogenic Transcription Factors. *Cell*. **112**, 193-205 (2003).

A Niedzwiecka, J Marcotrigiano, J Stepinski, M Jankowska-Anyszka, A Wyslouch-Cieszynska, M Dadlez, A Gingras, P Mak, E Darzynkiewicz, et al.. Biophysical studies of eIF4E Cap-Binding Protein: Recognition of mRNA 5' Cap Structure and Synthetic Fragments of eIF4G and 4E-BP1 Proteins. *J. Mol. Biol.*. **319**, 615-635 (2002).

M Perbandt, E Guthohrlein, W Rypniewski, K Idakieva, S Stoeva, W Voelter, N Genov, C Betzel. The Structure of a Functional Unit from the Wall of a Gastropod Hemocyanin Offers a Possible Mechanism for Cooperativity. *Biochemistry*. **42**, 6341-6346 (2003).

D Pilloff, K Dabovic, M Romanowski, J Bonanno, M Doherty, S Burley, T Lehy. The Kinetic Mechanism of Phosphomevalonate Kinase. *J. Biol. Chem.*. **278**, 4510-4514 (2003).

S Ray, J Bonanno, H Chen, S Wu, H De Lencastre, A Tomasz, S Burley. Crystal Structure of a Methanococcus Jannaschii DNA-Binding Protein: Implications for Antibiotic Resistance in Staphyloccoccus Aureus. *Proteins: Struc. Func. Genet.*. **50**, 170-173 (2003).

K Schneibner, J DeAngelis, S Burley, P Cole. Investigation of the Roles of Catalytic Residues in Serotonin N-Acetyltransferase. *J. Biol. Chem.*. **277**, 18118-18126 (2002).

T Schwartz, G Blobel. Structural Basis for the Function of the beta Subunit of the Eukaryotic Signal Recognition Particle Receptor. *Cell*. **112** (6), 793-803 (2003).

W Shi, D Ostrov, S Gerchman, H Kycia, W Studier, W Edstrom, A Bresnick, J Ehrlich, J Blanchard, et al. High-Throughput Structural Biology & Proteomics. *Protein Arrays, Biochips & Proteomics: The Next Phase of Genomics Discovery*, p. 299-324, Marcel Dekker, New York. (2003).

B Shin, D Maag, A Roll-Mecak, M Arefin, S Burley, J Lorsch, T Dever. Uncoupling of Initiation Factor eIF5B/IF2 GTPase and Translational Activities by Mutations that Lower Ribosome Affinity. *Cell*. **111**, 1015-1025 (2002).

R Soccio, R Adams, M Romanowski, E Sehayek, S Burley, J Breslow. The Novel Cholesterol-Regulated StarD4 Gene Encodes a StAR-Related Lipid Transfer Protein with two Closely Related Homologues. *Proc Natl Acad Sci USA*. **99**, 6943-6948 (2002).

J Sun, A Fedorov, S Lee, X Guo, K Shen, D Lawrence, S Almo, Z Zhang. Crystal Structure of PTP1B Complexed with a Potent and Selective Bidentate Inhibitor. *J. Biol. Chem.*. **278**, 12406-12414 (2003).

J Sun, L Wu, A Fedorov, S Almo, Z Zhang. Crystal Structure of the Yersinia Protein-Tyrosine Phosphatase YopH Complexed with a Specific Small Molecule Inhibitor. *J. Biol. Chem.*. **278**, 33392-33399 (2003).

Y Tseng, B Schafer, S Almo, D Wirtz. Functional Synergy of Actin Filament Cross-Linking Proteins. *J. Biol. Chem.*. **277**, 25609-25616 (2002).

S Vorobiev, B Strokopytov, D Drubin, C Frieden, S Ono, J Condeelis, P Rubenstein, S Almo. The Structure of Non-Vertebrate Actin: Implications for the ATP Hydrolytic Mechanism. *Proc Natl Acad Sci USA*. **100** (10), 5760-5765 (2003).

E Wolf, J De Angelis, E Khalil, P Cole, S Burley. X-Ray Crystallographic Studies of Serotonin N-Acetyltransferase Catalysis and Inhibition. *J. Mol. Biol.*. **317**, 215-224 (2002).

G Wu, G Xu, B Schulman, P Jeffrey, J Harper, N Pavletich. Structure of a Beta-TrCPI-Skp1-Beta-Catenin Complex: Destruction Motif Binding and Lysine Specificity of the SCF(beta-TrCP1) Ubiquitin Ligase. *Mol. Cell*. **6**, 1445-1456 (2003).

X Zhang, J Schwartz, S Almo, S Nathenson. Expression, Refolding, Purification, Molecular Characterization, Crystallization and Preliminary X-Ray Analysis of the Receptor Binding Domain of Human B7-2. *Protein Expr. Purif.*. **25**, 105-113 (2003).

X Zhang, J Schwartz, S Almo, S Nathenson. Crystal Structure of the Receptor-Binding Domain of Human B7-2: Insights into Organization and Signaling. *Proc Natl Acad Sci USA*. **100** (5), 2586-2591 (2003).

**Beamline X9B**

M Andrykovitch, K Routzahn, M Li, Y Gu, D Waugh, X Ji. Characterization of four orthologs of stringent starvation protein A. *Acta Cryst. D*. **59**, 881-886 (2003).

O Asojo, S Cater, D Hoover, C Boulegue, W Lu, J Lubkowski. Crystallization and Preliminary X-ray Studies of Thymus and Activation-Regulated Chemokine (TARC). *Acta Cryst. D*. **59**, 163-165 (2003).

O Asojo, C Boulegue, D Hoover, W Lu, J Lubkowski. Structures of Thymus and Activation-regulated Chemokine (TARC). *Acta Cryst. D*. **59**, 1165-1173 (2003).

O Asojo, E Afonina, S Gulnik, J Erickson, R Randad, D Medjahed, A Silva. Novel Uncomplexed and Complexed Structures of Phasmepsin II, an Asparticprotease from Plasmodium Falciparum. *J. Mol. Biol.*. **327**, 173-181 (2003).

S Banumathi, M Dauter, Z Dauter. Phasing at High Resolution using Ta6Br12 Cluster. *Acta Cryst. D*. **59**, 492-498 (2003).

M Bernett, S Blaber, I Scarisbrick, P Dhanarajan, S Thompson, M Blaber. Crystal Structure and Biochemical Characterization of Human Kallikrein 6 Reveals a Trypsin-like Kallikrein is Expressed in the Central Nervous System. *J. Biol. Chem.*. **277**, 24562-24570 (2002).

M Bernett, S Blaber, I Scarisbrick, P Dhanarajan, S Thompson, M Blaber. Crystal Structure and Biochemical Characterization of Human Kallikrein 6 Reveals a Trypsin-like Kallikrein is Expressed in the Central Nervous System. *Protein Sci.*. **11**, 137 (2002).

J Blaszczyk, Y Li, G Shi, H Yan, X Ji. Dynamic Roles of Arginine Residues 82 and 92 of Escherichia coli 6-Hydroxymethyl-7,8-dihydropterin Pyrophophokinase: Crystallographic Studies. *Biochemistry*. **42**, 1573-1580 (2003).

C Boesen, S Radaev, S Motyka, A Patamawenu, P Sun. The 1.1 Angstrom Crystal Structure of Human TGF-beta Type II Receptor Ligand Binding Domain. *Structure*. **10**, 913-942 (2002).

C Boesen, S Motyka, A Patamawenu, P Sun. Crystallization and Preliminary Crystallographic Studies of Human TGF-Beta Type II Receptor Ligand-Binding Domain. *Acta Cryst. D*. **58**, 1214-1216 (2002).

P Carrington, P Chivers, F Al-Mjeni, R Sauer, M Maroney. Nickel Coordination is Regulated by the DNA-bound State of NikR. *Nat. Struct. Biol.*. **10** (2), 126 (2003).

P Carrington, F Al-Mjeni, M Zoroddu, M Costa, M Maroney. Use of XAS for the Elucidation of Metal Structure and Function: Applications to Nickel Biochemistry, Molecular Toxicology, and Carcinogenesis. *Environ. Health Perspect.*. **5**, 705-708 (2002).

C Chang, E Magracheva, S Kozlov, S Fong, G Tobin, S Kotenko, A Wlodawer, A Zdanov. Crystal Structure of Interleukin-19 Defines a New Subfamily of Helical Cytokines . *J. Biol. Chem.*. **278**, 3308-3313 (2003).

Z Dauter. One-and-a Half Wavelength Approach. *Acta Cryst. D*. **58**, 1958-1967 (2002).

Z Dauter. New Approaches to High-Throughput Phasing. *Curr. Opin. Struct. Biol.*. **12**, 674-678 (2002).

Z Dauter, R Nagem. Direct Way to Anomalous Scatterers. *Z. Kristallogr.*. **217**, 694-702 (2002).

C Deivanagagam, E Wann, W Chen, M Carson, K Rajashankar, M Hook, S Narayana. A Novel Variant of the Immunoglobulin Fold in Surface Adhesions of Staphylococcus Aureus: Crystal Structure of the Fibrinogen-Binding MSCRAMM, Clumping Factor A. *EMBO J.*. **21**, 6660-6672 (2002).

G Gainsford, A Kay, A Woolhouse. 1-(2-Hydroxyethyl)-4-{4,5,6,7-Tetrahydro--1-[1-(2-Hydroxyethyl)-Pyridin-4(1H)-YL-Idene]-1H-Inden-3-YL}Pyridinium Iodide. *Acta Cryst. E*. **E59** (04), o589-o590 (2003).

X Guo, X Wen, L Esser, B Quinn, L Yu, C Yu, D Xia. Structural Basis for the Quinone Reduction in the bc1 Complex: A Comparative Analysis of Crystal Structures of Mitochondrial Cytochrome bc1 with Bound Substrate and Inhibitors at the Qi Site. *Biochemistry*. **42**, 9067-9080 (2003).

F Guo, M Maurizi, L Esser, D Xia. Crystal Structure of ClpA, an Hsp100 Chaperone and Regulator of ClpAP Protease. *J. Biol. Chem.*. **277** (48), 46743-46752 (2002).

F Guo, L Esser, S Singh, M Maurizi, D Xia. Crystal Structure of the Heterodimeric Complex of the Adaptor, ClpS, with the N-domain of the AAA+ Chaperone, ClpA*. *J. Biol. Chem.*. **277** (48), 46753-46762 (2002).

Y Guo, B Xiao, H Wargo, M Bucher, S Singh, X Ji. Residues 207, 216, and 221 and the Catalytic Activity of mGSTA1-1 and MGSTA2-2 toward Benzo[a]pyrene-(7R,8S)-diol-(9S,10R)-epoxide. *Biochemistry*. **42**, 917-921 (2003).

P Hall, Y Wang, R Rivera-Hainaj, X Zheng, M Pustai-Carey, P Carey, V Yee. Transcarboxylase 12S crystal structure: hexamer assembly and substrate binding to a multienzyme core. *EMBO J.*. **22** (10), 2334-2347 (2003).

A Hofmann, H Iwai, S Hess, A Plucktuh, A Wlodawer. Structure of Cyclized Green Fluorescent Protein. *Acta Cryst. D*. **58**, 1400-1406 (2002).

A Hofmann, D Dolmer, A Wlodawer. The Crystal Structure of Annexin Gh1 from Gossypium Hirsutum Reveals an Unusual S3 Cluster. *Eur. J. Biochem.*. **270**, 2557-2564 (2003).

E Jaffe, J Kervinen, J Martins, F Stauffer, R Neier, A Wlodawer, A Zdanov. Species-Specific Inhibition of Porphobilinogen Synthase by 4-oxosebacic Acid. *J. Biol. Chem.*. **277**, 19792-19799 (2002).

B Kang, D Cooper, F Jelen, Y Devedjiev, U Derewenda, Z Dauter, J Otlewski, Z Derewenda. PDZ Tandem of Human Syntenin: Crystal Structure and Functional Properties. *Structure*. **11**, 459-468 (2003).

M Kim, T Cierpicki, U Derewenda, D Krowarsch, Y Feng, Y Devedjiev, Z Dauter, C Walsh, J Otlewski, et al.. The DCX-domain tandems of doublecortin and doublecortin-like kinase. *Nat. Struct. Biol.*. **10** (5), 324-333 (2003).

J Kim, I Yang, S Rhee, Z Dauter, Y Lee, S Park, K Kim. Crystal Structures of Glutaryl 7-Aminocephalosporanic Acid Acylase: Insight into Autoproteolytic Activation. *Biochemistry*. **42**, 4084-4093 (2003).

M Kim, U Derewenda, Y Devedjiev, Z Dauter, Z Derewenda. Purification and Crystallization of the N-Terminal Domain from the Human Doublecortin-like Kinase. *Acta Cryst. D*. **59**, 502-505 (2003).

O Kleifeld, A Frenkel, J Martin, I Sagi. Active Site Electronic Structure and Dynamics During Metalloenzyme Catalysis. *Nat. Struct. Biol.*. **10** (2), 98 (2003).

O Kleifeld, S Shi, R Zarivasch, M Eisenstein, I Sagi. The Conserved Glu-60 in the Active Site of Thermoanaerobacter Brockii Alcohol Dehydrogenase is not Essential for Catalysis. *Protein Sci.*. **12**, 468-479 (2003).

J Knowlton, M Bubunenko, M Andrykovitch, W Guo, K Routzahn, D Waugh, D Court, X Ji. A Spring-Loaded State of NusG in Its Functional Cycle is Suggested by X-ray Crystallography and Supported by Site-Directed Mutants. *Biochemistry*. **42**, 2275-2281 (2003).

C Lehmann, J Debreczeni, G Bunkoczi, M Dauter, Z Dauter, L Vertesy, G Sheldrick. Structures of Four Crystal Forms of Decaplanin. *Helv. Chim. Acta*. **86**, 1478-1486 (2003).

M Lim, J Rohde, A Stubna, M Bukowski, M Costas, R Ho, E Munck, W Nam, L Que. An FeIV==O complex of a tetradentate tripodal nonheme ligand. *Proc Natl Acad Sci USA*. **100** (7), 3665-3670 (2003).

K Longenecker, P Read, S Lin, A Somlyo, R Nakamoto, Z Derewenda. Structure of a Constitutively Activated RhoA Mutant (Q63L) at 1.55 Angstrom Resolution. *Acta Cryst. D*. **59**, 876-880 (2003).

J Lubkowski, M Dauter, K Aghaiypour, A Wlodawer, Z Dauter. Atomic Resolution Structure of Erwinia Chrysanthemi L-Asparaginase. *Acta Cryst. D*. **59**, 84-92 (2003).

T Martin, Z Dauter, Y Devedijiev, P Sheffield, F Jelen, M He, D Sherman, J Otlewski, Z Derewenda, U Derewenda. Molecular Basis of Mitomycin C Resistance in Streptomyces: Structure and Function of the MRD Protein. *Structure*. **10**, 933-942 (2002).

M Miller, J Shuman, T Sebastian, Z Dauter, P Johnson. Structural Basis for DNA Recognition by the Basic Region Leucine Zipper Transcription Factor CCAAT/Enhancer -Binding Protein Alpha. *J. Biol. Chem.*. **278**, 15178-15184 (2003).

W Nam, S Choi, M Lim, J Rohde, I Kim, J Kim, C Kim, L Que, Jr. Reversible Formation of Iodosylbenzene-Iron Porphyrin Intermediates in the Reaction of Oxoiron(IV) Porphyrin pi-Cation Radicals and Iodobenzene. *Angew. Chem. Int. Ed.*. **42**, 109-111 (2003).

P Natesh, K Manikandan, P Bhanumoorthy, M Viswamitra , S Ramakumar. Thermostable Xylanase from Thermoascus Aurantiacus at Ultrahigh Resolution (0.89 Angstrom) at 100 K and Atomic Resolution (1.11 Angstrom) at 293 K Refined Anisotropically to Small-molecule Accuracy. *Acta Cryst. D*. **59**, 105-117 (2003).

J Penner-Hahn. Snapshots of Transition States. *Nat. Struct. Biol.*. **10**, 75-77 (2002).

J Phan, A Zdanov, A Evdokimov, J Tropea, H Peters, R Kapust, M Li, A Wlodawer, D Waugh. Structural basis for the substrate specificity of tobacco etch virus protease. *J. Biol. Chem.*. **277** (52), 50564-50572 (2002).

T Pochapsky, S Pochapsky, T Ju, H Mo, F Al-Mjeni, M Maroney. Modeling and Experiment Yields the Structure of Acireductone Dioxygenase from Klebsiells Pneumoniae. *Nat. Struct. Biol.*. **9**, 966-972 (2002).

L Que, L Banci. Bioinorganic Chemistry. *Curr Opin Chem Biol*. **6**, 169-170 (2002).

U Ramagopal, M Dauter, Z Dauter. Phasing on Anomalous Signal of Sulfurs: What is the Limit?. *Acta Cryst. D*. **59**, 1020-1027 (2003).

U Ramagpal, M Dauter, Z Dauter. SAD Manganese in Two Crystal Forms of Glucose Isomerase. *Acta Cryst. D*. **59**, 868-875 (2003).

B Ramakrishnan, P Qasba. Comparison of the Closed Conformation of the Beta-1,4-Galactosyl-Transferase-I (beta 4Gal-T1) in the Presence and Absence of Alpha-Lactalbumin (LA). *J. Biomol. Struct. Dyn.*. **21** ( 1), 1-8 (2003).

V Ramasamy, B Ramakrishnan, E Boeggeman, P Qasba. The Role of Tryptophan 314 in the Conformational Changes of beta1,4-Galactosyltransferase-I. *J. Mol. Biol.*. **331**, 1065-1076 (2003).

G Roelfes, V Vrajmasu, K Chen, R Ho, J Rohde, C Zondervan, R la Crois, E Schudde, M Lutz, et al.. End-on and Side-on Peroxo Derivatives of Non-Heme Iron Complexes with Pentadentate Ligands: Models for Putative Intermediates in Biological Iron/Dioxygen Chemistry. *Inorg. Chem.*. **42**, 2639-2653 (2003).

P Sun, S Radaev. Generating Isomorphous Heavy-Atom Derivatives by a Quick Soak Method. Part II: Phasing of New Structures. *Acta Cryst. D*. **58**, 1099-1103 (2002).

C Taylor, S Watton, P Bryngelson, M Maroney. inner-Sphere Complexation of Cobalt(II) 2,9-dimethyl-1,10-Phenanthroline ([Co(neo)]2+) with Commercial and Sol-Gel Derived Silica Gel Surfaces. *Inorg. Chem.*. **42**, 312-320 (2003).

I Uson, B Schmidt, R von Bulow, S Grimme, K von Figura, M Dauter, K Rajashankar, Z Dauter, G Sheldrick. Locating the Anomalous Scatterer Substructures in Halide and Sulfur Phasing. *Acta Cryst. D*. **59**, 57-66 (2003).

M Weiss, Z Wan, M Zhao, Y Chu, S Nakagawa, G Burke, W Jia, R Hellmich, P Katsoyannis. Non-Standard Insulin Design: Structure-Activity Relationships at the Periphery of the Insulin Receptor. *J. Mol. Biol.*. **315**, 103-111 (2002).

**Beamline X10A**

Y Akpalu, Y Lin. Multivariable Structural Characterization of Semicrystalline Polymer Blends by Small-Angle Light Scattering. *J. Polym. Sci., Part B: Polym. Phys.*. **40**, 2714-2727 (2002).

D Coleman, J Fernsler, N Chattham, M Nakata, Y Takanishi, E Korblova, D Link, R Shao, W Jang, et al. Polarized-Modulated Smectic Liquid Crystal Phases. *Science*. **301**, 1204-1211 (2003).

**Beamline X10B**

D Vanderah, R Gates, V Silin, D Zeiger, J Woodward, C Meuse. Isostructural Self-Assembled Monolayers. 1. Octadecyl 1-Thiaoligo(ethylene oxides). *Langmuir*. **19**, 2612-2620 (2003).

**Beamline X10C**

T Das, G Jacobs, P Patterson, W Conner, J Li, B Davis. Fischer-Tropsch synthesis: characterization and catalytic properties of rhenium promoted cobalt alumina catalysts. *Fuel*. **82**, 805-815 (2003).

**Beamline X11A**

Y Arai, A Lanzirotti, S Sutton, J Davis, D Sparks. Arsenic Speciation and Reactivity in Poultry Litter. *Environ. Sci. Tech.*. **37** (18), 4083-4090 (2003).

A Argo, J Odzak, B Gates. Role of Cluster Size in Catalysis: Spectroscopic Investigation of ã-Al2O3-Supported Ir4 and Ir6 during Ethene Hydrogenation. *J. Am. Chem. Soc.*. **125**, 7107-7115 (2003).

A Argo, B Gates. MgO-Supported Rh6 and Irg: Structural Characterization during the Catalysis of Ethene Hydrogenation. *J. Phys. Chem. B*. **107**, 5519-5528 (2003).

S Calvin, E Carpenter, R Stroud, V Harris. Characterization of Core/Shell Nanoparticles by X-Ray Absorption Spectroscopy. *2003 Nanotechnology Conference and Trade Show*, Vol 3, p. 82-85, sponsored by Nano Science and Technology Institute. (2003).

S Calvin, E Carpenter, B Ravel, V Harris, S Morrison. Multiedge Refinement of Extended X-Ray-Absorption Fine Structure of Manganese Zinc Ferrite Nanoparticles. *Phys. Rev. B: Condens. Matter*. **66** (22), 224405-1 - 224405-13 (2002).

S Calvin, E Carpenter, V Harris. Characterization of passivated iron nanoparticles by x-ray absorption spectroscopy. *Phys. Rev. B: Condens. Matter*. **68** (3), 033411-1-033411-4 (2003).

S Calvin, M Miller, R Goswami, S Cheng, S Mulvaney, L Whitman, V Harris. Determination of crystallite size in a magnetic nanocomposite using extended x-ray absorption fine structure. *J. Appl. Phys.*. **94** (1), 778-783 (2003).

C Dodge, A Francis. Structural characterization of a ternary Fe(III)-U(VI)-citrate complex. *Radiochim. Acta*. **91**, 525-532 (2003).

J Goellner, B Gates. Synthesis and Characterization of Site-Isolated Hexarhodium Clusters on Titania Powder. *J. Phys. Chem. B*. **105** (16), 3269-3281 (2001).

A Mansour, P Smith, W Baker, M Balasubramanian, J McBreen. A Comparative In Situ X-Ray Absorption Spectroscopy Study of Nanophase V2O5 Aerogel and Ambigel Cathodes,. *J. Electrochem. Soc.*. **150** (4), A403-A413 (2003).

S Morrison, C Cahill, E Carpenter, S Calvin, V Harris. Preparation and Characterization of MnZn-Ferrite Nanoparticles Using Reverse Micelles. *J. Appl. Phys.*. **93** (10), 7489-7491 (2003).

M Nachtegaal, D Sparks. Nickel Sequestration in a Kaolinite-Humic Acid Complex. *Environ. Sci. Tech.*. **37**, 529-534 (2003).

D Roberts, A Scheinost, D Sparks. Zinc speciation in contaminated soils combing direct and indirect characterization methods. *Geochemical and Hydrological Reactivity of Heavy Metals in Soils*, p. 187-227, Lewis Publishers, Boca Raton. (2003).

D Roberts, R Ford, D Sparks. Kinetics and Mechanisms of Zn Complexation on Metal Oxides using EXAFS Spectroscopy. *J. Colloid Interface Sci.*. **263** (2), 364-376 (2003).

K Scheckel, C Impellitteri, J Ryan, T McEvoy. Assessment of a Sequential Extraction Procedure for Perturbed Lead-Contaminated Samples with and without Phosphorus Amendments. *Environ. Sci. Tech.*. **37**, 1892-1898 (2003).

A Scheinost, R Kretzschmar, S Pfister, D Roberts. Combining Selective Sequential Extractions, X-ray Absorption Spectroscopy, and Principal Component Analysis for Quantitative Zinc Speciation in Soil. *Environ. Sci. Tech.*. **36** (23), 5021 (2002).

P Trivedi, J Dyer, D Sparks. Lead Sorption onto Ferrihydrite. 1. A Macroscopic and Spectroscopic Assessment. *Environ. Sci. Tech.*. **37** (5), 908-914 (2003).

A Voegelin, A Scheinost, K Buehlmann, K Barmettler, R Kretzschmar. Slow formation and dissolution of Zn precipitates in soils: A combined column-transport and XAFS study. *Environ. Sci. Tech.*. **36** (17), 3749-3754 (2002).

W Yoon, Y Kim, X Yang, J McBreen, C Grey. 6Li MAS NMR and in situ X-ray Studies of Lithium Nickel Manganese Oxides. *J. Power Sources*. **119** (1), 649-653 (2003).

**Beamline X12B**

P Dai, P Cebe, M Capel, R Alamo, L Mandelkern. In Situ Wide- and Small-Angle X-ray Scattering Study of Melting Kinetics of Isotactic Poly(propylene). *Macromolecules*. **36**, 4042-4050 (2003).

S Eswaramoorthy, S Gerchman, V Graziano, H Kycia, F Studier, S Swaminathan. Structure of a Yeast Hypothetical Protein Selected by a Structural Genomics Approach. *Acta Cryst. D*. **59**, 127-135 (2003).

K Ferguson, M Berger, J Mendrola, H Cho, D Leahy, M Lemmon. EGF activates its receptor by removing interactions that auto-inhibit ectodomain dimerization. *Mol. Cell*. **11**, 507-517 (2003).

J Hansen, J Ippolito, N Ban, P Nissen. The Structures of Four Macrolide Antibiotics Bound to the Large Ribosomal Subunit. *Mol. Cell*. **10**, 117-128 (2002).

J Hunt, J Deisenhofer. Ping-Pong Cross-Validation in Real Space: a Method for Increasing the Phasing Power of a Partial Model Without Risk of Model Bias. *Acta Cryst. D*. **59**, 214-224 (2003).

S Johnson, J Taylor, L Beese. Processive DNA Synthesis Observed in a Polymerase Crystal Suggests a Mechanism for the Prevention of Frameshift Mutations. *Proc Natl Acad Sci USA*. **100** (7), 3895-3900 (2003).

Y Joly. Calculating X-ray Absorption Near-Edge Structure at Very Low Energy. *J. Synch. Rad.*. **10**, 58-63 (2003).

J Keller, P Smith, J Benach, D Christendat, G deTitta, J Hunt. The Crystal Structure of MT0146/CbiT Suggests that the Putative Precorrin-8w Decarboxylase Is a Methyltransferase. *Structure*. **10**, 1475-1487 (2002).

A Kilshtain-Vardi, M Glick, H Greenblatt, A Goldblum, G Shoham. Refined Structure of Bovine Carboxypeptidase A at 1.25 Angstrom Resolution. *Acta Cryst. D*. **59**, 323-333 (2003).

A Mavroudis, A Avgeropoulos, N Hadjichristidis, E Thomas, D Lohse. Synthesis and Morphological Behavior of Model Linear and Miktoarm Star Copolymers of 2-Methyl-1, 3-Pentadiene and Styrene. *Chem. Mater.*. **15**, 1976-1983 (2003).

P Paaventhan, J Joseph, S Nirthanan, G Rajaseger, P Gopalakrishnakone, R Kini, P Kolatkar. Crystallization and Preliminary X-ray Analysis of Candoxin, a Novel Reversible Neurotoxin from the Malayan Krait Bungarus Candidus. *Acta Cryst. D*. **59**, 584-586 (2003).

S Perez-Miller, T Hurley. Coenzyme Isomerization Is Integral to Catalysis in Aldehyde Dehydrogenase. *Biochemistry*. **42**, 7100-7109 (2003).

N Silvaggi, J Anderson, S Brinsmade, R Pratt, J Kelly. The Crystal Structure of Phosphonate-Inhibited D-Ala-D-Ala Peptidase Reveals an Analogue of a Tetrahedral Transition State. *Biochemistry*. **42** (5), 1199-1208 (2003).

E Sundberg, P Andersen, P Schlievert, K Karjalaine, R Mariuzza. Structural, Energetic, and Functional Analysis of a Protein-Protease Interface at Distinct Stages of Affinity Maturation. *Structure*. **11**, 1151-1161 (2003).

**Beamline X12C**

M Andrykovitch, K Routzahn, M Li, Y Gu, D Waugh, X Ji. Characterization of four orthologs of stringent starvation protein A. *Acta Cryst. D*. **59**, 881-886 (2003).

J Benach, I Lee, W Edstrom, A Kuzin, Y Chiang, T Acton, G Montelione, J Hunt. The 2.3-A crystal structure of the shikimate 5-dehydrogenase orthologue YdiB from Escherichia coli suggests a novel catalytic environment for an NAD-dependent dehydrogenase.. *J. Biol. Chem.*. **278** (21), 19176-82 (2003).

V Cherezov, K Riedl, M Caffrey. Too Hot to Handle? Synchrotron X-ray Damage of Lipid Membranes and Mesophases. *J. Synch. Rad.*. **9** (6), 333-341 (2002).

Y Chi, J Frantz, B Oh, L Hansen, S Shoelson. Diabetes mutations delineate an atypical POU domain in HNF1a.. *Mol. Cell*. **10**, 1129 (2002).

S Dutta, I Akey, C Dingwall, K Hartman, T Laue, R Nolte, J Head, C Akey. The crystal structure of nucleoplasmin-core: implications for histone binding and nucleosome assembly. *Mol. Cell*. **8** (4), 841-853 (2001).

B Eichman, E O'Rourke, J Radicella, T Ellenberger. Crystal structures of 3-methyladenine DNA glycosylase MagIII . *EMBO J.*. **22** (19), 4898-4909 (2003).
M Hu, P Li, M Li, W Li, T Yao, J Wu, W Gu, R Cohen, Y Shi. Crystal Structure of a UBP-Family Deubiquitinating Enzymen in Isolation and in Complex with Ubiquitin Aldehyde. *Cell*. **111**, 1041-1054 (2002).
Q Huai, H Wang, Y Sun, H Kim, Y Liu, H Ke. Three-dimensional Structures of PDE4D in Complex with Roliprams and Implication on Inhibitor Selectivity. *Structure*. **11**, 865-873 (2003).
M Huang, A Rigby. Structural basis of membrane binding by Gla domains of Vitamine-K dependent proteins. *Nat. Struct. Biol.*. **10** (9), 751 (2003).
S Kamtekar, W Kennedy, J Wang, C Strathopoulos, D Soll, T Steitz. The Structural Basis of Cysteine Aminoacylation of tRNA ^Pro by Prolyl-tRNA Synthetases. *Proc Natl Acad Sci USA*. **100** (4), 1673-1678 (2003).
N Karpowich, H Huang, P Smith, J Hunt. Crystal Structures of the BtuF Periplasmic-vinging Protein for Vitamin B12 Suggest a Functionally Important Reduction in Protein Mobility upon Ligand Binding. *J. Mol. Biol.*. **278** (10), 8429-8434 (2003).
R Khayat, R Batra, C Qian, T Halmos, M Bailey, L Tong. Structural and Biochemical Studies of Inhibitor Binding to Human Cytomegalovirus Protease. *Biochemistry*. **42**, 885-891 (2003).
S Kruse, R Zhao, D Smith, D Jones. Structure of a Specific Alcohol-Binding Site Defined by the Odorant Binding Protein LUSH from Drosophila melanogaster. *Nat. Struct. Biol.*. **10** (9), 694-700 (2003).
D M Himmel, S Gourinath, L Reshetnikova, Y Shen, A G Szent-Gyorgyi, C Cohen. Crystallographic Findings on the Internally-uncoupled and Near-rigor States of Myosin: Further Insights into the Mechanics of the Motor. *Proc Natl Acad Sci USA*. **99** (20), 12645-12650 (2002).
W McGrath, J Ding, A Didwania, R Sweet, W Mangel. Crystallographic structure at 1.6-A resolution of the human adenovirus proteinase in a covalent complex with its 11-amino-acid peptide cofactor: insights on a new fold. *Biochim Biophys Acta*. **1648** ((1-2)), 1-11 (2003).
P O'Neill, D Stevens, E Garman. Physical and Chemical Considerations of Damage Induced in Protein Crystals by Synchrotron Radiation: A Radiation Chemical Perspective. *J. Synch. Rad.*. **9** (6), 329-332 (2002).
S Perez-Miller, T Hurley. Coenzyme Isomerization Is Integral to Catalysis in Aldehyde Dehydrogenase. *Biochemistry*. **42**, 7100-7109 (2003).
P Stolt, H Jeon, H Song, J Herz, M Eck, S Blacklow. Origins of Peptide Selectivity and Phosphinositide Binding Revealed by Structures of Disabled-1 PTB Domain Complexes. *Structure*. **11**, 569-579 (2003).
L Xu, S Benson, S Butcher, D Bamford, R Burnett. The Receptor Binding Protein P2 of PRD1, A Virus Targeting Antibiotic-Resistant Bacteria, Has a Novel Fold Suggesting Multiple Functions. *Structure*. **11**, 309-322 (2003).
X Yang, R Skene, D McRee, P Schimmel. Crystal Structure of a Human Aminoacyl-tRNA Synthetase Cytokine. *Proc Natl Acad Sci USA*. **99** (24), 15369-15374 (2002).
P Yuan, G Jedd, D Kumaran, S Swaminathan, H Shio, D Hewitt, N Chua, K Swaminathan. A HEX-1 Crystal Lattice Required for Woronin Body Function in Neurospora Crassa. *Nat. Struct. Biol.*. **10** (4), 264 (2003).
J Yuvaniyama, P Chitnumsub, S Kamchonwongpaisan, J Vanichtanankul, W Sirawaraporn, P Taylor, M Walkinshaw, Y Yuthavong. Insights into antifolate resistance from malarial DHFR-TS structures . *Nat. Struct. Biol.*. **10** (5), 357-65 (2003).

**Beamline X13A**

F Castano, Y Hao, S Haratani, C Ross, B Vogeli, H Smith, C Sanchez-Hanke, C Kao, X Zhu, P Grutter. Magnetic force microscopy and x-ray scattering study of 70x550 nm2 pseudo-spin-valve nanomagnets. *J. Appl. Phys.*. **93** (10), 7927-7929 (2003).

**Beamline X13B**

K Evans-Lutterodt, J Ablett, A Stein, C Kao, D Tennant, F Klemens, A Taylor, C Jacobsen, P Gammel, et al.. Single-element Elliptical Hard X-ray Micro-optics. *Opt. Express*. **11** (8), 919-926 (2003).
K Evans-Lutterodt, A Stein, J Ablett, C Kao, D Tennant, F Klemens, A Taylor, C Jacobsen, P Gammel, et al.. From Lighthouses to Synchrotron Lightsources: Hard X-ray Micro-optics. *Synch. Rad. News*. **16** (3), 60-63 (2003).

**Beamline X14A**

D Arms, R Shah, R Simmons. X-ray Debye-Waller Factor Measurements of Solid He-3 and He-4. *Phys. Rev. B*. **67** (9), 094303 (2003).
R Benenson, J Bai, W Gibson. Transmission of x-ray polarization through glass capillary fibers. *Rev. Sci. Instrum.*. **74** (1), 23-27 (2003).
J Howe, C Rawn, L Jones, H Ow. Improved crystallographic data for graphite. *Powder Diffr.*. **18** (2), 150 (2003).
J Kim, R Ryba, J Bai. Effect of the Polyurethane Crystalline Interphase Formed at an Al Surface on Water-Vapor Absorption. *J. Appl. Polym. Sci.*. **89**, 1417 (2003).
J Kim, E Ryba, J Bai. Grazing incidence X-ray diffraction studies on the structures of polyurethane films and their effects on adhesion to Al substrates. *Polymer*. **44**, 6663 (2003).
D Klenov, W Donner, B Foran, S Stemmer. Impact of stress on oxygen vacancy ordering in epitaxial LSCO thin films. *Appl. Phys. Lett.*. **82** (20), 3427-3430 (2003).
J Kmetko, C Yu, G Evmenenko, S Kewalramani, P Dutta. Evidence of Registry at the Interface during Inorganic Nucleation at an Organic Template. *Phys. Rev. Lett.*. **89** (18), 186102 (2002).
J Kmetko. Effects of Divalent Ions on Langmuir Monolayers: Synchrotron X-ray Scattering Studies. Ph.D. Thesis. Northwestern University, Chicago. (2002).

J Li, S Moss, Y Zhang, A Mascarenhas, L Pfeiffer, K West, W Ge, J Bai. Layer Ordering and Faulting in (GaAs)n/(AlAs)n Ultrashort-Period Superlattices . *Phys. Rev. Lett.*. **91**, 106103 (2003).

Q Qian, T Tyson, C Dubourdieu, A Bossak, J Sénateur , M Deleon, J Bai, G BonFait, J Maria. Structural, magnetic, and transport studies of La0.8MnO3 films. *J. Appl. Phys.*. **92** (8), 4518 (2002).

**Beamline X15A**

L Chapman, M Hasnah, O Oltulu, Z Zhong, J Mollenhauer, C Muehleman, K Kuettner, M Aurich, E Pisano, et al.. Diffraction Enhanced X-ray Imaging of Articular Cartilage. US Patent No. 657,7708. (2003).

F Dilmanian, H Weinmann, Z Zhong, T Bacarian, L Rigon, T Buttone, B Ren, X Wu, N Zhong, H Atkins. Tailoring X-ray Beam Energy Spectrum to Enhance Image Quality of New Radiography Contrast Agents Based on Gd or Other Lanthanides. *SPIE: Physics of Medical Imaging*, Vol 4320, p. 417-426, sponsored by SPIE. (2001).

M Hasnah, Z Zhong, O Oltulu, E Pisano, R Johnston, D Sayers, W Thomlinson, D Chapman. Diffraction Enhanced Imaging Contrast Mechanisms in Breast Cancer Specimens. *Med. Phys.*. **29**, 2216-2221 (2002).

M Hasnah, O Oltulu, Z Zhong, D Chapman. Application of Absorption and Refraction Matching Techniques for Diffraction Enhanced Imaging. *Rev. Sci. Instrum.*. **73**, 1657-1659 (2002).

M Hasnah, O Oltulu, Z Zhong, D Chapman. Single Exposure Simultaneous Diffraction Enhanced Imaging. *Nucl. Instrum. Meth. A*. **492**, 236-240 (2002).

M Kiss. Application of diffraction enhanced imaging for obtaining improved contrast of calcifications in breast tissue. PhD Thesis. North Carolina State University, Raleigh. (2002).

M Kiss, D Sayers, Z Zhong. Measurement of image contrast using diffraction enhanced imaging. *Phys. Med. Biol.*. **48** (3), 325-340 (2003).

T Lee, C Kumpf, A Kazimirov, P Lyman, G Scherb, M Bedzyk, M Nielsen, R Feidenhansl, R Johnson, J Zegenhagen. Structural analysis of indium-stabilized GaAs(001)-c(8x2) surface. *Phys. Rev. B: Condens. Matter*. **66**, 235301-1-9 (2002).

J Li, Z Zhong, R Litdke, K Kuettner, C Peterfy, E Aleyeva, C Muehleman. Radiography of Soft Tissue of the Foot and Ankle with Diffraction Enhanced Imaging. *J. Anatomy*. **202**, 463-470 (2003).

J Mollenhauer, M Aurich, Z Zhong, C Muehleman, A Cole, M Hasnah, O Oltulu, K Kuettner, A Margulis, L Chapman. Diffraction Enhanced X-ray Imaging of Articular Cartilage. *Osteoarthr. Cartilage*. **10**, 168-171 (2002).

C Muehleman, L Chapman, K Kuettner, J Rieff, J Mollenhauer, K Massuda, Z Zhong. Radiography of Rabbit Articular Cartilage with Diffraction Enhanced Imaging. *Anatomical Record*. **272A**, 392-397 (2003).

C Muehleman, M Whiteside, Z Zhong, J Mollenhauer, M Aurich, K Kuettner, L Chapman. Diffraction enhanced imaging for articular cartilage. *Biophys. J.*. **82**, 2292-2292 (2002).

C Muehleman, Z Zhong, J Williams, K Kuettner, M Aurich, B Han, J Mollenhauer. Diffraction-enhanced X-ray Imaging of Articular Cartilage of Experimental Animals. *Proceedings Annual Meeting Othrop. Research Society*, Vol , p. 365, sponsored by Ann. Mtg. Orthop. Res. Soc.. (2002).

O Oltulu, Z Zhong, M Hasnah, D Chapman. Multiple Image Radiography in Diffraction Enhanced Imaging. *J. Phys. D: Appl. Phys.*. **36**, 2152-2156 (2003).

L Rigon, Z Zhong, F Arfelli, R Menk, A Pillon. Diffraction Enhanced Imaging utilizing different crystal reflections at Elettra and NSLS. *Proc. SPIE 4632: Physics of Medical Imaging*, Vol 4632, p. 29, sponsored by SPIE. (2002).

H Roberts, M Helba, J Carroll, J Burnett, T Drummond, J Lepak, R Propri, Z Zhong, F Agee. Gamma Spectroscopy of Hf-178m2 using Synchrotron X-rays. *Hyperfine Interact.*. **143**, 111-119 (2002).

B Tinkham, D Goodner, D Walko, M Bedzyk. X-ray studies of Si/Ge/Si(001) epitaxial growth with Te as a surfactant . *Phys. Rev. B: Condens. Matter*. **67**, 035404-1-6 (2003).

M Wernick, O Wirjadi, D Chapman, O Oltulu, Z Zhong, Y Yang. Preliminary investigation of a multiple-image radiography method. *IEEE. Intl. Symposium on Biomed. Imaging: Macro to Nano* , Vol (2002), p. 1435, sponsored by National Institute of Health. (2002).

Z Zhong, D Chapman, D Connor, A Dilmanian, N Gmur, M Hasnah, R Johnston, M Kiss, J Li, et al.. Diffraction Enhanced Imaging of Soft Tissues. *Synch. Rad. News*. **15** (6), 27-34 (2002).

Z Zhong, C Kao, D Siddons, H Zhong, J Hastings. X-ray reflectivity of sagittally bent Laue crystals. *Acta Cryst. A*. **59**, 1-6 (2003).

Z Zhong, D Chapman, M Hasnah, E Johnston, M Kiss, O Oltulu, L Rigon, N Zhong, E Pisano, D Sayers. X-ray Diffraction Order-selection with a Prism in DEI. *12th National Conference on Sychrotron Radiation Instrumentation*, Vol 73, p. 1614, sponsored by American Institute of Physics. (2002).

Z Zhong, C Kao, D Siddons, J Hastings. Rocking-curve width of sagittally bent Laue crystals. *Acta Cryst. A*. **58**, 487-493 (2002).

Z Zhong, D Siddons, D Chapman, C Kao, N Zhong, J Hastings. Model of Sagittally-bent Silicon Crystals Diffracting in the Laue Mode: the Effects of Elastic-Anisotropy on the Rocking-curve Widths. *12th National Conference on Sychrotron Radiation Instrumentation*, Vol 73, p. 1615, sponsored by University of Wisconsin-Madison. (2002).

**Beamline X16C**

A Frenkel, A Kolobov, I Robinson, J Cross, Y Maeda, C Bouldin. Direct Separation of Short Range Order in Intermixed Nanocrystalline and Amorphous Phases. *Phys. Rev. Lett.*. **89**, 285503 (2002).

**Beamline X17B1**

J Chen, D Weidner, M Vaughan, J Parise, J Zhang, Y Xu. A Combined CCD/IP Detection System for Monochromatic XRD Studies at High Pressure and Temperature. *Science and Technology of High*

*Pressure*, p. 1035-1038 , Universities Press Ltd., Hyderabad. (2000).

M Croft, I Zakharchenko, Z Zhong, T Tsakalakos, Y Gulak, Z Kalman, J Hastings, J Hu, R Holtz, K Sadananda. Stress Distribution and Tomographic Profiling with Energy Dispersive X-Ray Scattering. *MRS Proceedings: Applications of Synchrotron Radiation Techniques to Materials Science*, Vol 678, sponsored by Materials Research Society. (2002).

C Cui, T Tyson, Z Zhong, J P Carlo, Y Qin. Effects of Pressure on Electron Transport and Atomic Structure of Manganites: Low to High Pressure Regimes. *Phys. Rev. B: Condens. Matter*. **67**, 104107 (2003).

A Dilmanian, N Zhong, T Bacarian, J Tammam, J Kalef-Ezra, P Micca, M Miura, L Rigon, B Scharf, D Slatkin. Response of Subcutaneous Murine Mammary Carcinoma EMT-6 to Synchrotron-generated Segmented X-ray Microbeams. *Proceedings of the Joint Symposium on Bio-Sensing and Bio-Imaging, A. Akatsuka, Ed.*, p. 118-122, sponsored by Yamagata University. (2003).

A Dilmanian, T Button, G Le Duc, N Zhong, L Pena, J Smith, S Martinez, T Bacarian, J Tammam, B Ren. Response of rat intracranial 9L gliosarcoma to microbeam radiation therapy. *Neuro-Oncology*. **4**, 26-38 (2002).

F Dilmanian, H Weinmann, Z Zhong, T Bacarian, L Rigon, T Buttone, B Ren, X Wu, N Zhong, H Atkins. Tailoring X-ray Beam Energy Spectrum to Enhance Image Quality of New Radiography Contrast Agents Based on Gd or Other Lanthanides. *SPIE: Physics of Medical Imaging*, Vol 4320, p. 417-426, sponsored by SPIE. (2001).

A Dilmanian, G Morris, N Zhong, T Bacarian, J Hainfeld, J Kalef-Ezra, L Brewington, J Tammam, E Rosen. Murine EMT-6 carcinoma: high therapeutic efficacy of microbeam radiation therapy. *Radiat. Res.*. **159**, 632-641 (2003).

M Hasnah, O Oltulu, Z Zhong, D Chapman. Single Exposure Simultaneous Diffraction Enhanced Imaging. *Nucl. Instrum. Meth. A*. **492**, 236-240 (2002).

A Hennessy, G Graham, J Hastings, P Siddons, Z Zhong. New pressure flow cell to monitor BaSO4 precipitation using synchrotron in-situ angle dispersive X-ray diffraction. *J. Synch. Rad.*. **9**, 323-324 (2002).

J Hu, J Xu, M Somayazulu, Q Guo, D Herschbach, J Hemley, H Mao. X-ray diffraction and laser heating: application of moissanite anvil cell. *J. Phys.: Condens. Matter*. **14**, 10479 (2002).

B Noheda, Z Zhong, D Cox, G Shirane, S Park, P Rehring. Electric-field induced phase transitions in rhombohedral Pb(Zn1/3Nb2/3)1-xTixO3. *Phys. Rev. B*. **65**, art no. 224101 (2002).

L Rigon, Z Zhong, F Arfelli, R Menk, A Pillon. Diffraction Enhanced Imaging utilizing different crystal reflections at Elettra and NSLS. *Proc. SPIE 4632: Physics of Medical Imaging*, Vol 4632, p. 29, sponsored by SPIE. (2002).

H Roberts, M Helba, J Carroll, J Burnett, T Drummond, J Lepak, R Propri, Z Zhong, F Agee. Gamma Spectroscopy of Hf-178m2 using Synchrotron X-rays. *Hyperfine Interact.*. **143**, 111-119 (2002).

T Tsakalakos, M Croft, I Zakharchenko, Z Zhong, Y Gulak, M Desilva, R Holtz. On the Mechanical Stability of Nanostructured Coatings by Synchrotron Radiation. *AIAA 2002*, Vol AIAA-2002, p. 1314, sponsored by AIAA. (2002).

G Voronin, C Pantea, T Zerda, L Wang, Y Zhao. In situ X-ray diffraction study of silicon at pressures up to 15.5 GPa and temperatures up to 1073 K. *Phys. Rev. B: Condens. Matter*. **68**, 020102 (2003).

J Xu, H Mao, R Hemley, E Hines. Moissanite anvil cell: a new tool for high-pressure research. *J. Phys.: Condens. Matter*. **14**, 11543 (2002).

I Zakharchenko, Y Gulak, Z Zhong, M Croft, T Tsakalakos. Methodology of Synchrotron EDXRD Strain Profiling. *Advances in X-ray Analysis*, Vol 46, sponsored by International Centre for Diffraction Data. (2002).

I Zakharchenko, Y Gulak, Z Zhong, M Croft, T Tsakalakos. Application of Synchrotron EDXRD Strain Profiling in Shot Peened Materials. *Advances in X-ray Analysis*, Vol 46, sponsored by International Centre for Diffraction Data. (2002).

Z Zhong, D Siddons, D Chapman, C Kao, N Zhong, J Hastings. Model of Sagittally-bent Silicon Crystals Diffracting in the Laue Mode: the Effects of Elastic-Anisotropy on the Rocking-curve Widths. *12th National Conference on Sychrotron Radiation Instrumentation*, Vol 73, p. 1615, sponsored by University of Wisconsin-Madison. (2002).

Z Zhong, D Chapman, D Connor, A Dilmanian, N Gmur, M Hasnah, R Johnston, M Kiss, J Li, et al.. Diffraction Enhanced Imaging of Soft Tissues. *Synch. Rad. News*. **15** (6), 27-34 (2002).

N Zhong, G Morris, T Bacarian, E Rosen, A Dilmanian. Response of rat skin to high-dose unidirectional X-ray microbeams: a histological study. *Radiat. Res.*. **160**, 133-142 (2003).

Z Zhong, C Kao, D Siddons, H Zhong, J Hastings. X-ray reflectivity of sagittally bent Laue crystals. *Acta Cryst. A*. **59**, 1-6 (2003).

Z Zhong, D Chapman, M Hasnah, E Johnston, M Kiss, O Oltulu, L Rigon, N Zhong, E Pisano, D Sayers. X-ray Diffraction Order-selection with a Prism in DEI. *12th National Conference on Sychrotron Radiation Instrumentation*, Vol 73, p. 1614, sponsored by American Institute of Physics. (2002).

Z Zhong, C Kao, D Siddons, J Hastings. Rocking-curve width of sagittally bent Laue crystals. *Acta Cryst. A*. **58**, 487-493 (2002).

**Beamline X17C**

B Chen, D Penwell, L Benedetti, R Jeanloz, M Kruger. Particle-size effect on the compressibility of nanocrystalline alumina. *Phys. Rev. B: Condens. Matter*. **66**, 144101-4 (2002).

D Errandonea, M Somayazulu, D Hausermann. Phase transitions and amorphization of CaWO4 at high pressure. *Phys. Status Solidi B*. **235** (1), 162 - 169 (2003).

E Gregoryanz, A Goncharov, R Hemley, H Mao, M Somayazulu, G Shen. Raman, infrared, and x-ray evidence for new phases of. *Phys. Rev. B: Condens. Matter*. **66**, 224108 (2002).

Q Guo, H Mao, J Hu, J Shu, R Hemley. The phase transitions of CoO under static pressure to 104 GPa. *J. Phys.: Condens. Matter*. **14**, 11369 (2002).

D He, Y Zhao, T Sheng, R Schwarz, J Qian, K Lokshin, S Bobev, L Daemen, H Mao, J Hu. Bulk

metallic glass gasket for high pressure, in situ x-ray diffraction. *Rev. Sci. Instrum.*. **74**, 3012 (2003).

R Hemley, H Mao. New window on earth and planetary interiors. *Miner. Mag.*. **66**, 791-811 (2002).

R Hemley, H Mao. Overview of static high pressure science, in High-Pressure Phenomena. *Proceedings of the International School of Physics, "Enrico Fermi" Course CXLVII*, p. 3-40, IOS Press, Amsterdam. (2002).

J Hu, J Xu, M Somayazulu, Q Guo, D Herschbach, J Hemley, H Mao. X-ray diffraction and laser heating: application of moissanite anvil cell. *J. Phys.: Condens. Matter*. **14**, 10479 (2002).

A Kavner. Elasticity and strength of hydrous ringwoodite. *Earth Planet Sci. Lett.*. **214**, 645-654 (2003).

Y Lee, J Hriljac, S Kim, J Hanson, T Vogt. Pressure-Induced Hydration at 0.6 GPa in a Synthetic Gallosilicate Zeolite. *J. Am. Chem. Soc.*. **125**, 6036-6037 (2003).

K Lipinska-Kalita, B Chen, M Kruger, Y Ohki, J Murowchick, E Gogol. High-pressure x-ray diffraction studies of the nanostructured transparent vitroceramic medium K2O-SiO2-Ga2O3. *Phys. Rev. B: Condens. Matter*. **68**, 35209 (2003).

Z Liu, J Hu, H Yang, H Mao, R Hemley. High-pressure Synchrotron X-ray Diffraction and Infrared Microspectroscopy: Application to Dense Hydrous Phases. *J. Phys.: Condens. Matter*. **14**, 10641-10646 (2002).

Y Ma, C Prewitt, G Zou, H Mao, R Hemley. High-pressure high-temperature x-ray diffraction of beta-boron to 30 GPa. *Phys. Rev. B*. **67**, 174116 (2003).

S Merkel, A Jephcoat, J Shu, H Mao, P Gillet, R Hemley. Equation of state, elasticity, and shear strength of pyrite under high pressure. *Phys. Chem. Miner.*. **29**, 1-9 (2002).

C Sanloup, R Hemley, H Mao. Evidence for xenon silicates at high pressure and temperature. *Geophys. Res. Lett.*. **29**, 30 (2002).

S Shieh, T Duffy, B Li. Strength and Elasticity of SiO2 Across the Stishovite-CaCl2-type Structural Phase Boundary. *Phys. Rev. Lett.*. **89** (25), 255507-1 (2002).

S Shieh, T Duffy. Raman spectroscopy of Co(OH)2 to 30 GPa: Implications for amorphization and structural frustration. *Phys. Rev. B: Condens. Matter*. **66**, 134301 (2002).

Y Song, M Somayazulu, H Mao, R Hemley, D Herschbach. High-pressure structure and equation of state study of nitrosonium nitrate from synchrotron x-ray diffraction. *J. Chem. Phys.*. **118**, 8350 (2003).

J Xu, H Mao, R Hemley, E Hines. Moissanite anvil cell: a new tool for high-pressure research. *J. Phys.: Condens. Matter*. **14**, 11543 (2002).

G Xu, Z Zhong, Y Bing, Z Ye, C Stock, G Shirane. Ground State of the Relaxor Ferroelectric Pb(Zn1/3Nb2/3)O3. *Phys. Rev. B*. **67**, 104102 (2003).

J Xu, H Mao, R Hemley. Gem anvil cell: high-pressure behavior of diamond and related materials. *J. Phys.: Condens. Matter*. **14**, 11549 (2002).

**Beamline X18A**

H Mo, H Taub, U Volkmann, M Pino, S Ehrlich, F Hansen, E Lu, P Miceli. A Novel Growth Mode of Alkane Films on a SiO2 Surface. *Chem. Phys. Lett.*. **377**, 99-105 (2003).

X Yang, J McBreen, X Sun, M Balasubramanian. Structural studies of cathode and anode materials for lithium batteries using in situ XRD and X-ray absorption combined with NMR spectroscopy. *The 43rd Battery Symposium in Japan*, Vol 2I, p. 50, sponsored by The Electrochemical Society of Japan. (2002).

X Yang, J McBreen, M Balasubramanian, W Yoon, C Grey, M Yoshio, A Ueda, X Huang, L Chen, L Liu. Structural Studies of New Cathode and Anode Materials for Lithium Batteries Using In Situ XRD and x-ray Absorption Spectroscopy. *The 2002 Korean Battery Symposium*, Vol 1, p. 45, sponsored by The Korean Electrochemical Society. (2002).

W Yoon, Y Kim, X Yang, J McBreen, C Grey. 6Li MAS NMR and in situ X-ray Studies of Lithium Nickel Manganese Oxides. *J. Power Sources*. **119** (1), 649-653 (2003).

C Yu, A Richter, J Kmetko, S Dugan, A Datta, P Dutta. Structure of interfacial liquids: X-ray scattering studies. *Phys. Rev. E*. **63**, 021205 (2001).

Y Zhang, R Colella, S Kycia, A Goldman. Absolute Structure Factor Measurements of an Al-Pd-Mn Quasicrystal. *Acta Cryst. A*. **58**, 385-390 (2002).

**Beamline X18B**

O Adamopoulos, Z Yu, M Croft, I Zakharchenko, T Tsakalakos, M Muhammed. The characterisation and reactivity of nanostructured cerium-copper-oxide composites for environmental catalysis. *Synthesis, Functional Properties and Applications of Nanostructures. Symposium (Materials Research Society Symposium Proceedings Vol.676)*, Vol 676, p. Y8.11.1-6, sponsored by Mater. Res. Soc. (2002).

F Alamgir. The Structural Origins Of The Stability of Palladium-Nickel-Phosphorus Bulk Metallic Glasses. Ph.D. Thesis. Lehigh University, Bethlehem. (2003).

W Alvarez, B Kitiyanan, A Borgna, D Resasco. Synergism of Co and Mo in the catalytic production of single-wall carbon nanotubes by decomposition of CO. *Carbon*. **39**, 547-558 (2001).

G Chen, H Jain, M Vlcek, S Khalid, J Li, D Drabold, S Elliott. Observation of Light Polarization-dependent Structural Changes in Chalcogenide Glasses. *Appl. Phys. Lett.*. **82** (5), 706 (2003).

G Chen, H Jain, M Vlcek, J Li, D Drabold, S Khalid, S Elliott. Study of light-induced vector changes in the local atomic structure of As¨CSe glasses by EXAFS. *J. Non-Cryst. Solids*. **326-327**, 257 (2003).

G Chen, H Jain, S Khalid, J Li, D Drabold, S Elliott. Study of Structural Changes in Amorphous As2Se3 By EXAFS under In-Situ Laser Irradiation. *Solid State Commun.*. **120**, 149-153 (2001).

M Croft, W Caliebe, H Woo, T Tyson, D Sills, Y Hor, S Cheong, V Kiryukhin, S Oh. Metal-insulator transition in CuIr2S4: XAS results on the electronic structure. *Phys. Rev. B: Condens. Matter*. **67**, 201102-1-4 (2003).

T Das, G Jacobs, P Patterson, W Conner, J Li, B Davis. Fischer-Tropsch synthesis: characterization

and catalytic properties of rhenium promoted cobalt alumina catalysts. *Fuel*. **82**, 805-815 (2003).

R Egdal, A Hazell, F Larsen, C McKenzie, R Scarrow. A dihydroxo-bridged Fe(II)-Fe(III) complex: A new member of the diiron diamond core family.. *J. Am. Chem. Soc.*. **125** (1), 32-33 (2003).

K Galbreath, C Crocker, C Nyberg, F Huggins, G Huffman, K Larson. Nickel speciation measurements of urban particulate matter: method evaluation and relevance to risk assessment. *J. Environ. Monit.*. **5**, 56N-61N (2003).

M Giacomini, M Balasubramanian, S Khalid, J McBreen, E Ticianelli. Characterization of the Activity of Palladium-Modified Polythiophene Electrodes for the Hydrogen Oxidation and Oxygen Reduction Reactions. *J. Electrochem. Soc.*. **150** (5), A588-A593 (2003).

J Herrera, D Resasco. Role of Co-W Interaction in the Selective Growth of Single-Walled Carbon Nanotubes from CO Disproportionation. *J. Phys. Chem. B*. **107**, 3738-3746 (2003).

F Huggins, N Yap, G Huffman, C Senior. XAFS characterization of mercury captured from combustion gases on sorbents at low-temperature. *Fuel Process. Technol.*. **82**, 167-196 (2003).

G Jacobs, T Das, P Patterson, J Li, L Sanchez, B Davis. Fischer-Tropsch Synthesis: XAFS studies of the effect of water on a Pt-promoted Co/Al2O3 catalyst. *Appl. Catal. A*. **247** (2), 335 (2003).

G Popov, M Greenblatt, M Croft. Large effects of a-site average cation size on the properties of the double perovskites Ba2 xSrxMnReO6, a d5-d1 System. *Phys. Rev. B: Condens. Matter*. **B67**, 24406 (2003).

N Sakulchaicharoen , D Resasco. Temperature dependence of the quality of silicon nanowires produced over a titania-supported gold catalyst. *Chem. Phys. Lett.*. **377** (3), 377-383 (2003).

N Shah, S Pattanaik, F Huggins, D Panjala, G Huffman. XAFS and Mössbauer spectroscopy characterization of supported binary catalysts for nonoxidative dehydrogenation of methane. *Fuel Process. Technol.*. **83**, 163-173 (2003).

J Shearer, S Fitch, W Kaminsky, J Benedict, R Scarrow, J Kovacs. How does Cyanide Inhibit Superoxide Reductase? Insight from Synthetic Fe(III)N4S Model Complexes. *Proc Natl Acad Sci USA*. **100** (7), 3671-3676 (2003).

X Yang, J McBreen, X Sun, M Balasubramanian. Structural studies of cathode and anode materials for lithium batteries using in situ XRD and X-ray absorption combined with NMR spectroscopy. *The 43rd Battery Symposium in Japan*, Vol 2I, p. 50, sponsored by The Electrochemical Society of Japan. (2002).

X Yang, J McBreen, M Balasubramanian, W Yoon, C Grey, M Yoshio, A Ueda, X Huang, L Chen, L Liu. Structural Studies of New Cathode and Anode Materials for Lithium Batteries Using In Situ XRD and x-ray Absorption Spectroscopy. *The 2002 Korean Battery Symposium*, Vol 1, p. 45, sponsored by The Korean Electrochemical Society. (2002).

W Yoon, C Grey, M Balasubramanian, X Yang, J McBreen. In Situ X-ray Absorption Spectroscopic Study on LiNi0.5Mn0.5O2 Cathode Material during Electrochemical Cycling. *Chem. Mater.*. **15**, 3161-3169 (2003).

**Beamline X19A**

O Adamopoulos, Z Yu, M Croft, I Zakharchenko, T Tsakalakos, M Muhammed. The characterisation and reactivity of nanostructured cerium-copper-oxide composites for environmental catalysis. *Synthesis, Functional Properties and Applications of Nanostructures. Symposium (Materials Research Society Symposium Proceedings Vol.676)*, Vol 676, p. Y8.11.1-6, sponsored by Mater. Res. Soc. (2002).

S Beauchemin, D Hesterberg, J Chou, M Beauchemin, R Simard, D Sayers. Speciation of Phosphorus in Phosphorus-enriched Agricultural Soils using X-ray Absorption Near-edge Spectroscopy and Chemical Fractionation. *J. Environ. Qual.*. **32**, 1809-1819 (2003).

B Bostick, S Fendorf. Arsenite Sorption on Troilite (FeS) and Pyrite (FeS2). *Geochim. Cosmochim. Acta*. **67** (5), 909-921 (2003).

A Cady. Optical and resonant x-ray diffraction investigations of molecular ordering in chiral liquid crystals. Ph.D. Thesis. University of Minnesota, Minneapolis. (2003).

M Croft, W Caliebe, H Woo, T Tyson, D Sills, Y Hor, S Cheong, V Kiryukhin, S Oh. Metal-insulator transition in CuIr2S4: XAS results on the electronic structure. *Phys. Rev. B: Condens. Matter*. **67**, 201102-1-4 (2003).

G Liu, J Rodriguez, J Hrbek, B Long, D Chen. Interaction of Thiophene with Titania Surfaces. *J. Mol. Catal. A: Chem.*. **202**, 215-227 (2003).

J McBreen, X Yang, M Balasubramanian, X Sun, H Lee. Synchrotron X-ray Studies of Lithium-Ion Battery Components. *The 43rd Battery Symposium in Japan*, Vol 2I, p. 46, sponsored by The Electrochemical Society of Japan. (2002).

G Popov, M Greenblatt, M Croft. Large effects of a-site average cation size on the properties of the double perovskites Ba2 xSrxMnReO6, a d5-d1 System. *Phys. Rev. B: Condens. Matter*. **B67**, 24406 (2003).

J Qian, U Skyllberg, W Frech, W Bleam, P Bloom, P Petit. Bonding of Methyl Mercury to Reduced Sulfur Groups in Soil and Stream Organic Matter as Determined by X-ray Absorption Spectroscopy and Binding Affinity Studies. *Geochim. Cosmochim. Acta*. **66** (22), 3873-3885 (2002).

J Rodriguez, P Liu, J Dvorak, T Jirsak, J Gomes, Y Takahashi, K Nakamura. Adsorption and decomposition of SO2 on TiC(001): An experimental and theoretical study. *Surf. Sci. Lett.*. **543**, L675-L682 (2003).

J Rodriguez, X Wang, J Hanson, G Liu, A Iglesias-Juez, M Fernandez-Garcia. The behavior of mixed-metal oxides: Structural and electronic properties of Ce-Ca oxides. *J. Chem. Phys.*. **119**, 5659-5669 (2003).

J Rodriguez, J Hanson, J Kim, G Liu, A Iglesias-Juez, M Fernandez-Garcia. Properties of Ce2 and Ce1-xZrxO2 Nanoparticles: X-ray Absorption Near-Edge Spectroscopy, Density Functional, and Time-Resolved X-ray Diffraction Studies. *J. Phys. Chem. B*. **107**, 3535-3543 (2003).

N Shah, S Pattanaik, F Huggins, D Panjala, G Huffman. XAFS and Mössbauer spectroscopy characterization of supported binary catalysts for

nonoxidative dehydrogenation of methane. *Fuel Process. Technol.*. **83**, 163-173 (2003).

U Skyllberg, J Qian, W Frech, K Xia, W Bleam. Distribution of mercury, methyl mercury and organic sulphur species in soil, soil solution and stream of a boreal forest catchment. *Biogeochemistry*. **64**, 53-76 (2003).

**Beamline X19C**

M Dudley. Studies of Defects and Strains Using X-ray Topography and Diffraction. *2003 SEM Annual Conference & Exposition on Experimental and Applied Mechanics*, Vol 1, p. 348-355, sponsored by SEM. (2003).

M Dudley, X Huang, W Vetter, P Neudeck. Synchrotron White Beam X-ray Topography and High Resolution Triple Axis X-ray Diffraction Studies of Defects in SiC Substrates, Epilayers and Devices. *4th European Conference on Silicon Carbide and Related Materials*, Vol 433-436, p. 247-252, sponsored by European Commission. (2003).

D Gidalevitz, Y Ishitsuka, A Muresan, O Konovalov, A Waring, R Lehrer, K Lee. Interaction of antimicrobial peptide protegrin with biomembranes. *Proc Natl Acad Sci USA*. **100** (11), 6302-6307 (2003).

L Hanley, Y Choi, E Fuoco, F Akin, M Wijesundara, M Li, A Tikhonov, M Schlossman. Controlling the Nanoscale Morphology of Organic Films Deposited by Polyatomic Ions. *Nucl. Instrum. Meth. B*. **203**, 116 (2003).

J Hartwig, J Baruchel, H Kuhn, X Huang, M Dudley, E Pernot. X-ray "Magnifying" Imaging Investigation of Giant Burgers Vector Micropipe Dislocations in 4H-SiC. *Nucl. Instrum. Meth. B*. **200**, 323-328 (2003).

X Huang, M Dudley. A Universal Computation Method for Two-Beam Dynamical X-ray Diffraction. *Acta Cryst. A*. **59**, 163-167 (2003).

M Li, D Chaiko, M Schlossman. X-ray Reflectivity Study of a Monolayer of Ferritin Proteins at a Nanofilm Aqueous-Aqueous Interface. *J. Phys. Chem. B*. **107**, 9079-9085 (2003).

R Ma, H Zhang, V Prasad, M Dudley. Growth kinetics and thermal stress of silicon carbide. *Cryst. Growth Des.*. **2** (3), 213-220 (2002).

X Ma, M Dudley, W Vetter, T Sudharshan. Extended Defects: Polarized Light Microscopy Delineation and Synchrotron White Beam X-ray Topography Ratification. *Japanese J. Appl. Phys.*. **42**, L1077-L1079 (2003).

R Ma, H Zhang, M Dudley, V Prasad. Thermal System Design and Dislocation Reduction for Growth of Wide Band-gap Crystals: Application to SiC Growth. *J. Cryst. Growth*. **258**, 318-330 (2003).

R Ma, H Zhang, M Dudley, S Ha, M Skowronski. Modeling for mass transfer and Thermal Stress of Silicon carbide PVT growth. *2002 ASME International Mechanical Engineering Congress and Exposition*, Vol 1, p. 1-9, sponsored by ASME. (2003).

P Neudeck, J Powell, D Spry, A Trunek, X Huang, W Vetter, N Dudley, M Skowronski, J Liu. Characterization of 3C-SiC Films Grown on 4H- and 6H-SiC Substrate Mesas during Step-Free Surface Hetero-Epitaxy. *4th European Conference on Silicon Carbide and related Materials*, Vol 433-436, p. 213-216, sponsored by European Commission. (2003).

W Palosz, K Grasza, K Durose, D Halliday, N Boyall, M Dudley, B Raghothamachar, L Cai. The Effect of Wall Contact and Post-Growth Cool-Down on Defects in CdTe Crystals Grown by "Contactless" Physical Vapor Transport. *J. Cryst. Growth*. **254**, 316-328 (2003).

E Preble, P Miraglia, A Roskowski, W Vetter, M Dudley, R Davis. Domain Structures in 6H-SiC Wafers and Their Effect on the Microstructures of GaN Films Grown on AlN and Al0.2GaN0.8N Buffers Layers. *J. Cryst. Growth*. **258**, 75-83 (2003).

B Raghothamachar, M Dudley, J Rojo, K Morgan, L Schowalter. X-ray Characterization of Bulk AlN Single Crystals Grown by the Sublimation Technique. *J. Cryst. Growth*. **250**, 244-250 (2003).

A Tikhonov, M Schlossman. Surfactant and water ordering in triacontanol monolayers at the water-hexane interface. *J. Phys. Chem. B*. **107**, 3344 (2003).

W Vetter, J Liu, M Dudley, M Skowronski, H Lendenmann, C Hallin. Dislocation Loops Formed During the Degradation of Forward-Biased 4H-SiC p-n Junctions. *Mater. Sci. Eng. B*. **98**, 220-224 (2003).

B Wu, R Ma, H Zhang, M Dudley, R Schlesser, Z Sitar. Growth kinetics and thermal stress in AlN bulk crystal growth. *J. Cryst. Growth*. **253**, 326-339 (2003).

B Yang, D Li, S Rice. Structure of the liquid-vapor interface of a dilute ternary alloy: Pb and In in Ga. *Phys. Rev. B*. **67**, 05423 (2003).

B Yang, D Li, S Rice. Two Dimensional Freezing of Tl in the Liquid-Vapor Interface of a Dilute Tl in Ga Alloy. *Phys. Rev. B*. **67**, 212103 (2003).

U Zimmermann, J Osterman, D Kuylenstierna, A Hallen, A Konstantinov, W Vetter, M Dudley. Material Defects in 4H-Silicon Carbide Diodes. *J. Appl. Phys.*. **93** (1), 611 (2003).

**Beamline X20A**

S Anders, M Toney, T Thomson, J Thiele, B Terris, S Sun, C Murray. X-ray Studies of Magnetic Nanoparticle Assemblies. *J. Appl. Phys.*. **93** (10), 7343 (2003).

S Anders, M Toney, T Thomson, R Farrow, J Thiele, B Terris. X-ray Absorption and Diffraction Studies of Magnetic Nanoparticle Assemblies. *J. Appl. Phys.*. **93**, 6299 (2003).

R Bandhu, R Sooryyakumar, R Farrow, D Weller, M Toney, T Rabedeau. Elastic Properties of Chemically Ordered Co3Pt Thin Films. *J. Appl. Phys.*. **91**, 2737 (2002).

P Clegg, C Stock, R Birgeneau, C Garland, A Roshi, G Iannacchione. Effect of a quenched random field on a continuous symmetry breaking transition: Nematic to smectic-A transition in 8OCB-aerosil dispersions. *Phys. Rev. E*. **67**, 021703 (2003).

P Clegg, R Birgeneau, S Park, C Garland, G Iannacchione, R Leheny, M Neubert. High-resolution x-ray study of the nematic - smectic-A and smectic-A - smectic-C transitions in liquid-crystal - aerosil gels. *Phys. Rev. E*. **68**, 031706 (2003).

G Iannacchione, S Park, C Garland, R Birgeneau, R Leheny. Smectic ordering in liquid-crystal–aerosil

dispersions. II. Scaling analysis. *Phys. Rev. E*. **67** (1), 011709 (2003).
S Kaldor, C Noyan. Effects of Boundary Conditions and Anisotropy on Elastically Bent Silicon. *Exp. Mech.*. **42** (3), 353-358 (2002).
V Khmelenko, S Kiselev, D Lee, C Lee. Impurity-Helium Solids - Quantum Gels?. *Phys. Scr.*. **T102**, 118 (2002).
W Lee, M Toney, A Kellock, D Mauri, M Carey, J Hedstrom. Effects of Mn Concentration and Deposition Temperature on the Giantmagnetoresistance Properties of Ion Beam Deposited PtMn Spin Valves. *J. Appl. Phys.*. **91**, 2737 (2003).
R Leheny, S Park, R Birgeneau, J Gallani, C Garland, G Iannacchione. Smectic ordering in liquid-crystal–aerosil dispersions. I. X-ray scattering. *Phys. Rev. E*. **67** (1), 011708 (2003).
P Mooney. Materials for Strained Si Devices. *Selected Topics in Electronics and Systems*, p. 99-108, World Scientific, New Jersey. (2002).
P Mooney. Materials for Strained Si Devices. *Int. J. High Speed Electr. And Syst.*. **12**, 305-314 (2002).
M Toney, W Lee, J Hedstrom, A Kellock. Thickness and Growth Temperature Dependence of Structure and Magnetism in FePt Thin Films. *J. Appl. Phys.*. **93**, 9902 (2003).
M Toney, M Samant, T Lin, D Mauri. Thickness Dependence of Exchange Bias and Structure in PtMn and NiMn Spin Valves. *Appl. Phys. Lett.*. **81**, 4565 (2003).
W Zang, Y Yao. Laser Shock Processing (LSP) of Metal Thin Films. *Conference on Laser Materials Processing*, Vol 2002, p. CD, sponsored by 20th International Congress on Applications of Lasers and Electro-Optics, Scottsdale AZ. (2002).
W Zhang. Microscale Laser Ablative Processes. Ph.D. Thesis. Columbia University, New York. (2002).

**Beamline X20C**

S Anders, M Toney, T Thomson, J Thiele, B Terris, S Sun, C Murray. X-ray Studies of Magnetic Nanoparticle Assemblies. *J. Appl. Phys.*. **93** (10), 7343 (2003).
S Anders, M Toney, T Thomson, R Farrow, J Thiele, B Terris. X-ray Absorption and Diffraction Studies of Magnetic Nanoparticle Assemblies. *J. Appl. Phys.*. **93**, 6299 (2003).
R Bandhu, R Sooryyakumar, R Farrow, D Weller, M Toney, T Rabedeau. Elastic Properties of Chemically Ordered Co3Pt Thin Films. *J. Appl. Phys.*. **91**, 2737 (2002).
G Cohen, C Cabral, Jr., C Lavoie, P Soloman, K Guarini, K Chan, R Roy. A Self-aligned Silicide Process Utilizing Ion Implantation for Reduced Silicon Consumption and Control of the Silicide Formation Temperature . *Materials Research Society Symposium Proceedings*, Vol 716, p. 35, sponsored by Materials Research Society. (2002).
G Cohen, C Cabral, Jr., C Lavoie, P Soloman, K Guarini, K Chan, R Roy. A Self-aligned Process for Thin Silicon-on-insulator MOSFETS and Bulk MOSFETS with Shallow Junctions. *59th Annual Device Research Conference June 2001*, Vol 686, p. 89, sponsored by Material Research Symp. Proc.. (2002).
C Detavernier, C Lavoie, F d'Heurle. Thermal Expansion of the Isostructural PtSi and NiSi: Negative Expansion Coefficient in NiSi and Stress Effects in Thin Films. *J. Appl. Phys.*. **93** (5), 2510-2515 (2003).
A Gungor, K Barmak, A Rollett, C Cabral, Jr., J Harper. Texture and Resistivity of Dilute Binary Cu(Al), Cu(In), Cu(Ti), Cu(Nb), Cu(Ir), and Cu(W) Alkloy Thin Films. *J. Vac. Sci. Technol., A*. **20** (6), 2314 (2002).
G Iannacchione, S Park, C Garland, R Birgeneau, R Leheny. Smectic ordering in liquid-crystal–aerosil dispersions. II. Scaling analysis. *Phys. Rev. E*. **67** (1), 011709 (2003).
S Kaldor, C Noyan. Effects of Boundary Conditions and Anisotropy on Elastically Bent Silicon. *Exp. Mech.*. **42** (3), 353-358 (2002).
H Kim, C Cabral, Jr., C Lavoie, S Rossnagel. The Growth of Tantalum Thin Films by Plasma-Enhanced Atomic Layer Deposition and Diffusion Barrier Properties . *Materials Research Society Symposium Proceedings*, Vol 716, p. 407, sponsored by Materials Research Society. (2002).
C Lavoie, F d'Heurle, C Detavernier, C Cabral, Jr.. Towards Implementation of a Nickel Silicide Process for CMOS Technologies. *Microelectron. Eng.*. **70**, 144-157 (2003).
W Lee, M Toney, A Kellock, D Mauri, M Carey, J Hedstrom. Effects of Mn Concentration and Deposition Temperature on the Giantmagnetoresistance Properties of Ion Beam Deposited PtMn Spin Valves. *J. Appl. Phys.*. **91**, 2737 (2003).
R Leheny, S Park, R Birgeneau, J Gallani, C Garland, G Iannacchione. Smectic ordering in liquid-crystal–aerosil dispersions. I. X-ray scattering. *Phys. Rev. E*. **67** (1), 011708 (2003).
P Mooney. Materials for Strained Si Devices. *Int. J. High Speed Electr. And Syst.*. **12**, 305-314 (2002).
P Mooney. Materials for Strained Si Devices. *Selected Topics in Electronics and Systems*, p. 99-108, World Scientific, New Jersey. (2002).
A Ozcan, K Ludwig, C Cabral, Jr., C Lavoie, J Harper. Texture Formation in Ti-Ta Alloy Disilicide Thin Films. *J. Appl. Phys.*. **92** (12), 7210 (2002).
A Ozcan, K Ludwig, C Lavoie, C Cabral, Jr., J Harper, R Bradley. Nucleation and Growth Kinetics of Preferred C54 TiSi2 Orientation: Time-Resolved X-Ray Diffraction Measurements. *J. Appl. Phys.*. **92** (9), 5189 (2002).
S Rossnagel, I Noyan, C Cabral, Jr.. Phase Transformation of Thin Sputter-deposited Tungsten Films at Room Temperature. *J. Vac. Sci. Technol., B*. **20** (5), 2047 (2002).
P Solomon, K Guarini, Y Zhang, K Chan, E Jones, G Cohen, A Krasnoperova, M Ronay, O Dokumaci, H Hovel. A Planar, Self-Aligned, Double Gate MOSFET Technology. *IEEE Circuits Dev. Mag.*. **19** (1), 48 (2003).
S Sun, S Anders, T Thomson, J Baglin, M Toney, H Hamann, C Murray, B Terris. Controlled Synthesis and Assembly of FePt Nanoparticles. *J. Phys. Chem. B*. **107**, 5419-5425 (2003).
M Toney, W Lee, J Hedstrom, A Kellock. Thickness and Growth Temperature Dependence of Structure and Magnetism in FePt Thin Films. *J. Appl. Phys.*. **93**, 9902 (2003).

M Toney, M Samant, T Lin, D Mauri. Thickness Dependence of Exchange Bias and Structure in PtMn and NiMn Spin Valves. *Appl. Phys. Lett.*. **81**, 4565 (2003).

M Toney, E Marinero, M Doerner, P Rice. High Anisotropy CoPtCrB Magnetic Recording Media. *J. Appl. Phys.*. **94**, 4018 (2003).

**Beamline X21**

B Blank, T Kupp, A Deyhim, Y Cai, P Chow, C Kao. Development of a Spectrometer for Inelastic X-ray Measurements. *Proceedings of the 2nd International Workshop on Mechanical Engineering Design of Synchrotron Radiation Equipment and Instrumentation (MEDSI02)*, Vol , p. 308-314, sponsored by MEDSI02. (2002).

C Burns, P Giura, A Shukla, G Vanko, M Tuel-Benckendorf, E Isaacs, P Platzman. Probing Electronic Interactions in the Expanded Metal Compound Li-NH3. *Phys. Rev. Lett.*. **89**, 236404 (2002).

K Hamalainen, S Galambosi, H Sutinen, C Kao, R Sharon, M Deutsch. Near-threshold Mult-electronic Effects in the Cu K alpha 1,2 X-Ray Spectrum. *Phys. Rev. A*. **67**, 022510 (2003).

H Hayashi, Y Udagawa, J Gillet, W Caliebe, C Kao. Chemical Applications of Inelastic X-ray Scattering. *Chemical Application of Synchrotron Radiation*, p. 850, World Scientific, River Edge. (2002).

H Hayashi, N Wantanabe, Y Udagawa, C Kao. Momentum Dependence of ð-ð* Excitations of Benzene Rings in Condensed Phases. *J. Electron. Spectrosc. Relat. Phenom.*. **933**, 114-116 (2001).

H Hayashi, Y Udagawa, W Caliebe, C Kao. Lifetime-broadening Removed X-ray Absorption Near Edge Structure by Resonant Inelastic X-ray Scattering Spectroscopy. *Chem. Phys. Lett.*. **371**, 125 (2003).

H Mao, C Kao, R Hemley. Inelastic X-ray Scattering at Ultra-high Pressure. *J. Phys.: Condens. Matter*. **13**, 7847 (2001).

P Montano, D Price, A Macrander, B Cooper. Inelastic x-ray scattering from 6H-SiC. *Phys. Rev. B: Condens. Matter*. **66**, 165218 (2002).

Q Qian, T Tyson, S Savrassov, C Kao, M Croft. Electronic Structure of La(1-x)CaxMnO3 Determined by Spin-polarized X-ray Absorption Spectroscopy: Comparison of Experiments with Band-Structure Computations. *Phys. Rev. B*. **68**, 014429 (2003).

M v. Zimmermann, C Nelson, J Hill, D Gibbs, M Blume, D Casa, B Keimer, Y Murakami, C Kao, et al.. X-ray Resonant Scattering Studies of Orbital and Charge Ordering in Pr1-xCaxMnO3. *J. Magn. Magn. Mater.*. **233**, 31 (2001).

M v. Zimmermann, C Nelson, J Hill, D Gibbs, M Blume, D Casa, B Keimer, Y Murakami, C Kao, et al.. X-ray resonant scattering studies of orbital and charge ordering in Pr1-xCaxMnO3. *Phys. Rev. B*. **64**, 195133 (2001).

L Yang, L Ding, H Huang. New Phases of Phospholipids and Implications to the Membrane Fusion Problem. *Biochemistry*. **42** (22), 6631-6635 (2003).

L Yang, L Ding, H Huang. A Rhombohedral Phase of Lipid Containing a Membrane Fusion Intermediate Structure. *Biophys. J.*. **84**, 1808 (2003).

**Beamline X22A**

G da Silva, J Fossum, E DiMasi, K Maloy, S Lutnaes. Synchrotron x-ray scattering studies of water intercalation in a layered synthetic silicate. *Phys. Rev. E*. **66**, 011303 (2002).

G da Silva, J Fossum, E DiMasi, K Maloy. Hydration transitions in a nanolayered synthetic silicate: A synchrotron x-ray scattering study. *Phys. Rev. B*. **67**, 094114 (2003).

F He, B Wells, S Shapiro, M Zimmermann, A Clark, X Xi. Anomalous Phase Transition in Strained SrTiO3 Thin Films. *Appl. Phys. Lett.*. **83** (1), 123 (2003).

J Schearer, B Ocko, O Magnussen. Structure, dissolution, and passivation of Ni(111) electrodes in sulfuric acid solution: an in situ STM, x-ray scattering, and electrochemical study. *Electrochim. Acta*. **48**, 1169-1191 (2003).

H Schollmeyer, B Ocko, H Riegler. Surface Freezing of Triacontane at SiOx/Air Interfaces: Submonolayer Coverage. *Langmuir*. **18**, 4351 (2002).

J Wang, B Ocko, R Adzic. Overpotential Deposition of Ag Monolayer and Bilaer on Au(111) mediated by Pb Adlayer Unerpotential Deposition/Stripping Cysles. *Surf. Sci.*. **540** (2-3), 230 (2003).

**Beamline X22B**

J Blasie, S Zheng, J Strzalka. Solution to the phase problem for specular x-ray or neutron reflectivity from thin films on liquid surfaces. *Phys. Rev. B*. **67** (22), 224201 (2003).

E DiMasi, V Patel, M Sivakumar, M Olszta, Y Yang, L Gower. Polymer-Controlled Growth Rate of an Amorphous Mineral Film Nucleated at a Fatty Acid Monolayer. *Langmuir*. **18**, 8902-8909 (2002).

E DiMasi, M Olszta, V Patel, L Gower. When is template directed mineralization really template directed?. *Cryst. Eng.*. **5** (61), 346-350 (2003).

A Gibaud, D Grosso, B Smarsly, A Baptiste, J Bardeau, F Babonneau, D Doshi, Z Chen, C Brinker, C Sanchez. Evaporation-Controlled Self-Assembly of Silica Surfactant Mesophases. *J. Phys. Chem. B*. **107**, 6114-6118 (2003).

A Gibaud, D Doshi, B Ocko, V Goletto, C Brinker. Time-resolved in situ grazing incidence small angle x-ray scattering experiment of evaporation induced self-assembly. *Nanotechnology in Mesostructured Materials*, p. 351-354, Elsevier, St. Louis. (2003).

A Gibaud, A Baptiste, D Doshi, C Brinker, L Yang, B Ocko. Wall thickness and core radius determination in surfactant templated silica thin films using GISAXS and X-ray reflectivity. *Europhys. Lett.*. **63** (6), 833-839 (2003).

P Huber, O Shpyrko, P Pershan, B Ocko, H Tostmann, E DiMasi, M Deutsch. Short-range wetting at liquid gallium-bismuth alloy surfaces: X-ray measurements and square-gradient theory. *Phys. Rev. B: Condens. Matter*. **68**, 085409 (2003).

M Kent, H Kim, D Sasaki, J Majewski, G Smith, K Shin, S Satija, B Ocko. Segment concentration profile of myoglobin adsorbed tometal ion chelating lipid monolayers at the air-water interface by neutron reflection. *Langmuir*. **18**, 3754 (2002).

H Kraack, M Deutsch, B Ocko, P Pershan. The Structure of Organic Langmuir Films on liquid Metal Surfaces. *Nucl. Instrum. Meth. B*. **200**, 363-370 (2003).
H Kraack, B Ocko, P Pershan, E Sloutskin, M Deutsch. Structure of a Langmuir Film on a Liquid Metal Surface. *Science*. **298**, 1404 (2002).
H Lavoie, D Blaudez, D Vaknin, B Desbat, B Ocko, C Salesse. Spectroscopic and structural properties of valine gramicidin A in monolayers at the air-water interface. *Biophys. J.*. **83** (6), 3558-3569 (2002).
B Ocko, M Kelley, A Nikova, D Schwartz. Structure and Phase Behavior of Mixed Monolayers of Saturated and Unsaturated Fatty Acids. *Langmuir*. **18**, 9810-9815 (2002).
B Ocko, E Sirota, M Deutsch, E DiMasi, S Coburn, J Strzalka, S Zheng, A Tronin, T Gog, C Venkataraman. Positional order and thermal expansion of surface crystalline N-alkane monolayers. *Phys. Rev. E*. **6303** (3), 032602 (2001).
E Sloutskin, H Kraack, O Gang, B Ocko, E Sirota, M Deutsch. A Thin-thick Transition in the Surface-frozen Layer of a Binary Alcohol Mixture. *J. Chem. Phys.*. **118**, 10729 (2003).
E Sloutskin, O Gang, H Kraack, B Ocko, E Sirota, M Deutsch. Demixing transition in a quasi-two-dimensional surafce-frozen layer. *Phys. Rev. Lett.*. **89** (6), 065501 (2002).
A Tronin, J Strzalka, X Chen, P Dutton, B Ocko, J Blasie. Orientational distributions of the di-alpha-helical synthetic peptide ZnPPM-BBC16 in Langmuir monolayers by x-ray reflectivity and polarized epifluorescence. *Langmuir*. **17** (10), 3061-3066 (2001).
T Wandlowski, J Wang, B Ocko. Adsorption of bromide at the Ag(100) electrode surface. *J. Electroanal. Chem.*. **500** (1-2), 418-434 (2001).
S Ye, J Strzalka, X Chen, C Moser, P Dutton, J Blasie. Assembly of a Vectorially Oriented Four-Helix Bundle at the Air/Water Interface via Directed Electrostatic Interactions. *Langmuir*. **19**, 1515-1521 (2003).
S Zheng, J Strzalka, D Jones, S Opella, J Blasie. Comparative Structural Studies of Vpu Peptides in Phospholipid Monolayers by X-Ray Scattering . *Biophys. J.*. **84**, 2393-2415 (2003).

**Beamline X22C**

G Cao, L Balicas, Y Xin, J Crow, C Nelson. Quantum oscillations, colossal magnetoresistance, and the magnetoelastic interaction in bilayered Ca_3Ru_2O_7. *Phys. Rev. B: Condens. Matter*. **67** (18), 184405-1,8 (2003).
G Cao, L Balicas, Y Xin, E Dagotto, J Crow, C Nelson, D Agterberg. Tunneling Magnetoresistance and Quantum Oscillations in Bilayered Ca3Ru2O7. *Phys. Rev. B: Condens. Matter*. **67**, 060406(R) (2003).
D Gibbs. X-ray Magnetic Scattering. *Synch. Rad. News*. **14** (5), 4-10 (2001).
J Goff, R Sarthour, D McMorrow, F Yakhou, A Vigliante, D Gibbs, R Ward, M Wells. X-ray resonant scattering study of an intermediate-valence Ho-Ce alloy. *J. Magn. Magn. Mater.*. **226-230**, 1113-1115 (2001).
F He, B Wells, S Shapiro, M Zimmermann, A Clark, X Xi. Anomalous Phase Transition in Strained SrTiO3 Thin Films. *Appl. Phys. Lett.*. **83** (1), 123 (2003).
J Hill. Living on the K-edge: resonant scattering studies of electronic order in transition metal compounds. *Synch. Rad. News*. **14** (5), 21-26 (2001).
J Hill, C Nelson, M v. Zimmermann, Y Kim, D Gibbs, D Casa, B Keimer, Y Murakami, C Venkataraman, et al.. Orbital correlations in doped manganites. *Appl. Phys. A*. **73**, 723-730 (2001).
J Hill. Magnetic X-ray Scattering. *Characterization of Materials*, p. 752, John Wiley & Sons, New York. (2002).
V Kiryukhin, T Koo, H Ishibashi, J Hill, S Cheong. Average lattice symmetry and nanoscale structural correlations in magnetoresistive manganites. *Phys. Rev. B: Condens. Matter*. **67**, 064421 (2003).
H Nakao, Y Wakabayashi, T Kiyama, Y Murakami, M von Zimmerman, J Hill, D Gibbs, S Ishihara, Y Taguchi, Y Tokura. Quantitative Determination of the Atomic Scattering Tensor in Orbitally Ordered YTiO3 by using a Resonant X-ray Scattering Technique. *Phys. Rev. B*. **66**, 184419 (2002).
C Nelson, Y Kim, J Hill, D Gibbs, V Kiryukhin, T Koo, S Cheong. Structural distortions in the paramagnetic insulating phase of La0.7Ca0.3MnO3. *Materials Research Society 2001 Spring Meeting*, Vol 678, p. EE7.3, sponsored by MRS. (2001).
C Nelson, J Hill, D Gibbs. Resonant x-ray scattering as a probe of orbital and charge ordering. *Nanoscale Phase Separation and Colossal Magnetoresistance*, p. 179-183, Springer-Verlag, New York. (2002).
P Normile, W Stirling, D Mannix, G Lander, F Wastin, J Rebizant, S Coburn . (U1-xPux)Sb solid solutions. II. Energy dependencies. *Phys. Rev. B*. **66**, 014406 (2002).
M v. Zimmermann, C Nelson, J Hill, D Gibbs, M Blume, D Casa, B Keimer, Y Murakami, C Kao, et al.. X-ray resonant scattering studies of orbital and charge ordering in Pr1-xCaxMnO3. *Phys. Rev. B*. **64**, 195133 (2001).
M v. Zimmermann, C Nelson, Y Kim, J Hill, D Gibbs, H Nakao, Y Wakabayashi, Y Murakami, Y Tomioka, et al.. A resonant x-ray scattering study of octahedral tilt ordering in LaMnO3 and Pr1-xCaxMnO3. *Phys. Rev. B*. **64**, 1-9 (2001).
H Zajonz, D Gibbs, A Baddorf, D Zehner. Nanoscale strain distribution at the Ag/Ru(0001) interface. *Phys. Rev. B*. **67**, 155417-1 - 155417-8 (2003).

**Beamline X23A2**

F Alamgir. The Structural Origins Of The Stability of Palladium-Nickel-Phosphorus Bulk Metallic Glasses. Ph.D. Thesis. Lehigh University, Bethlehem. (2003).
D Brenner, S Sawant, P Hande, R Miller, C Elliston, Z Fu, G Randers-Pehrson, S Marino. Routine screening mammography: How important is the radiation-risk side of the benefit-risk equation?. *Int. J. Radiat. Biol.*. **78** (12), 1065-67 (2002).
C Dodge, A Francis. Structural characterization of a ternary Fe(III)-U(VI)-citrate complex. *Radiochim. Acta*. **91**, 525-532 (2003).

D McKeown, W Kot, I Pegg. X-ray Absorption Studies of the Local Strontium Environments in Borosilicate Waste Glasses. *J. Non-Cryst. Solids*. **317** (3), 290-300 (2003).

D McKeown, W Kot, I Pegg. X-ray Absorption Studies of Manganese Valence and Local Environment in Borosilicate Waste Glasses. *J. Non-Cryst. Solids*. **328**, 71-89 (2003).

F Ronci, P Stallworth, F Alamgir, T Schiros, J Sluytman, X Guo, P Reale, S Greenbaum, M denBoer, B Scrosati. Lithium-7 Nuclear Magnetic Resonance And Ti K-edge X-ray Absorption Spectroscopic Investigation Of Electrochemical Lithium Insertion In Li4/3+xTi5/3O4. *J. Power Sources*. **121**, 631-636 (2003).

**Beamline X23B**

S Calvin, E Carpenter, V Harris. Characterization of passivated iron nanoparticles by x-ray absorption spectroscopy. *Phys. Rev. B: Condens. Matter*. **68** (3), 033411-1-033411-4 (2003).

S Calvin, E Carpenter, B Ravel, V Harris, S Morrison. Multiedge Refinement of Extended X-Ray-Absorption Fine Structure of Manganese Zinc Ferrite Nanoparticles. *Phys. Rev. B: Condens. Matter*. **66** (22), 224405-1 - 224405-13 (2002).

G Chen, H Jain, M Vlcek, J Li, D Drabold, S Khalid, S Elliott. Study of light-induced vector changes in the local atomic structure of As¨CSe glasses by EXAFS. *J. Non-Cryst. Solids*. **326-327**, 257 (2003).

J Cui, Q Huang, J Vienot, H Yan, Q Wang, G Hutchison, A Richter, G Evmenenko, P Dutta, T Marks. Anode Interfacial Engineering Approaches to Enhancing Anode/Hole Transport Layer Interfacial Stability and Charge Injection Efficiency in Organic Light-Emitting Diodes. *Langmuir*. **18**, 9958-9970 (2002).

G Evmenenko, M van der Boom, C Yu, J Kmetko, P Dutta. Specular X-Ray Reflectivity Analysis of Adhesion Interface-Dependent Density Profiles in Nanometer-Scale Siloxane-Based Liquid Films. *Polymer*. **44** (4), 1051-1056 (2003).

A Facchetti, A Abbotto, L Beverina, M van der Boom, P Dutta, G Evmenenko, T Marks, G Pagani. Azinium-(ð-Bridge)-Pyrrole NLO-Phores: Influence of Heterocycle Acceptors on Chromophoric and Self-Assembled Thin-Film Properties. *Chem. Mater.*. **14**, 4996-5005 (2002).

A Facchetti, A Abbotto, L Beverina, M van der Boom, P Dutta, G Evmenenko, G Pagani, T Marks. Layer-by-layer self-assembled pyrrole-based donor-acceptor chromophores as electro-optic materials. *Chem. Mater.*. **15** (5), 1064-1072 (2003).

Y Koide, M Such, R Basu, G Evmenenko, J Cui, P Dutta, M Hersam, T Marks. Hot Microcontact Printing for Patterning ITO Surfaces. Methodology, Morphology, Microstructure, and OLED Charge Injectin Barrier Imaging. *Langmuir*. **19**, 86-93 (2002).

S Morrison, C Cahill, E Carpenter, S Calvin, V Harris. Preparation and Characterization of MnZn-Ferrite Nanoparticles Using Reverse Micelles. *J. Appl. Phys.*. **93** (10), 7489-7491 (2003).

F Ronci, P Stallworth, F Alamgir, T Schiros, J Sluytman, X Guo, P Reale, S Greenbaum, M denBoer, B Scrosati. Lithium-7 Nuclear Magnetic Resonance And Ti K-edge X-ray Absorption Spectroscopic Investigation Of Electrochemical Lithium Insertion In Li4/3+xTi5/3O4. *J. Power Sources*. **121**, 631-636 (2003).

S Yoon, P Helmke, J Amonette, W Bleam. X-ray Absorption and Magnetic Studies of Trivalent Lanthanide Ioins Sorbed on Pristine and Phosphate-Modifed Boehmite Surfaces. *Langmuir*. **18**, 10128-10136 (2002).

P Zhu, H Kang, A Facchetti, G Evmenenko, P Dutta, T Marks. Vapor Phase Self-Assembly of Electrooptic Thin Films via Triple Hydrogen Bonds. *J. Am. Chem. Soc.*. **125** (38), 11496-11497 (2003).

P Zhu, M van der Boom, H Kang, G Evmenenko, P Dutta , T Marks. Realization of Expeditious Layer-by-Layer Siloxane-Based Self-assembly as an Efficient Route to Structurally Regular Acentric Superlattices with Large Electro-optic Responses. *Chem. Mater.*. **14**, 4982-4989 (2002).

**Beamline X24A**

K McCarthy, U Arp, A Baciero, B Zurro, B Karlin. Response of chromium-doped alumina screens to soft x-rays using synchrotron radiation. *J. Appl. Phys.*. **94**, 958 (2003).

**Beamline X24C**

L Goray, J Seely. Efficiencies of Master, Replica, and Multilayer Gratings for the Soft X-Ray - Extreme Ultraviolet Range: Modeling Based on the Modified Intergral Method and Comparisons with Measurements. *Appl. Optics-OT*. **41**, 1434 (2002).

M Kowalski, R Cruddace, K Wood, D Yentis, H Gursky, T Barbee, Jr., W Goldstein, J Kordas, G Fritz, et al.. The Astrophysical Plasmadynamic Explorer (APEX): a high-resolution spectroscopic observatory. *Astronomical Telescopes and Instrumentation*, Vol 4854, p. 640-652, sponsored by SPIE. (2002).

B Sae-Lao, S Bajt, C Montcalm, J Seely. Performance of Normal-Incidence Molybdenum/Yttrium Multilayer-Coated Diffraction Grating at a Wavelength of 9 nm. *Appl. Optics-OT*. **41**, 2394 (2002).

J Seely. Extreme Ultraviolet Thin-Film Interference in an Al-Mg-Al Multiple-Layer Transmission Filter. *Appl. Optics-OT*. **41**, 5979 (2002).

J Seely, C Montcalm, S Bajt. High-Efficiency MoRu/Be Multilayer Grating Operating near Normal Incidence in the 11.1-12.0 nm Wavelength Range. *Appl. Optics-OT*. **40**, 5565 (2001).

J Seely, Y Uspenskii, Y Pershin, V Kondratenko, A Vinogradov. Skylab 3600 groove/mm Replica Grating with a Scandium-Silicon Multilayer Coating and High Normal-Incidence Efficiency at 38 nm Wavelength. *Appl. Optics-OT*. **41**, 1846 (2002).

J Seely, C Boyer, G Holland, J Weaver. X-Ray Absolute Calibration of the Time Response of a Silicon Photodiode. *Appl. Optics-OT*. **41**, 5209 (2002).

**Beamline X25**

J Alexander, C Nelson, V van Berkel, E Lau, J Studts, T Brett, S Spe, T Handel, H Virgin, D Fremont. Structural Basis of Chemokine Sequestration by a Herpesvirus Decoy Receptor. *Cell*. **111**, 343-356 (2002).

J Avalos, I Celic, S Muhammad, M Cosgrove, J Boeke, C Wolberger. Structure of a Sir2 Enzyme Bound to an Acetylated p53 Peptide. *Mol. Cell*. **10** (3), 523-535 (2002).

M Bertero, R Rothery, M Palak, C Hou, D Lim, F Blasco, J Weiner, N Strynadka. Insights into the Respiratory Electron Transfer Pathway from the Structure of Nitrate Reductase A. *Nat. Struct. Biol.*. **10** (9), 681-687 (2003).

I Bosanac, J Alattia, T Mal, J Chan, S Talarico, F Tong, K Tong, F Yoshikawa, T Furuichi, et al. Structure of the Inositol 1,4,5-trisphosphate Receptor Binding Core in Complex with its Ligand. *Nature*. **420**, 696 (2002).

T Brett, L Traub, D Fremont. Accessory Protein Recruitment Motifs in Clathrin-Mediated Endocytosis. *Structure*. **10** (6), 797-809 (2002).

G Cao, L Balicas, Y Xin, E Dagotto, J Crow, C Nelson, D Agterberg. Tunneling Magnetoresistance and Quantum Oscillations in Bilayered Ca3Ru2O7. *Phys. Rev. B: Condens. Matter*. **67**, 060406(R) (2003).

G Cao, L Balicas, Y Xin, J Crow, C Nelson. Quantum oscillations, colossal magnetoresistance, and the magnetoelastic interaction in bilayered Ca_3Ru_2O_7. *Phys. Rev. B: Condens. Matter*. **67** (18), 184405-1,8 (2003).

D Chimento, A Mohanty, R Kadner, M Wiener. Substrate-induced transmembrane signaling in the cobalamin transporter BtuB. *Nat. Struct. Biol.*. **10** (5), 394-401 (2003).

H Cho, K Mason, K Ramyar, A Stanley, S Gabelli, D Denney, D Leahy. Structure of the Extracellular Region of HER2 Alone and in Complex with the Herceptin Fab. *Nature*. **421**, 756-760 (2003).

J Ding, A Smith, S Geisler, X Ma, G Arnold, E Arnold. Crystal Structure of a Human Rhinovirus that Displays Part of the HIV-1 V3 Loop and Induces Neutralizing Antibodies against HIV-1. *Structure*. **10**, 999-1011 (2002).

R Dutzler, E Campbell, R MacKinnon. Gating the Selectivity Filter in ClC Chloride Channels. *Science*. **300**, 108-112 (2003).

C Escalante, L Shen, D Thanos, A Aggarwal. Structure of NF-kB p50/p65 Heterodimer Bound to the PRDII DNA Element fro mthe Interferon-beta Promoter. *Structure*. **10**, 383-391 (2002).

K Ferguson, M Berger, J Mendrola, H Cho, D Leahy, M Lemmon. EGF activates its receptor by removing interactions that auto-inhibit ectodomain dimerization. *Mol. Cell*. **11**, 507-517 (2003).

J Hansen, J Ippolito, N Ban, P Nissen. The Structures of Four Macrolide Antibiotics Bound to the Large Ribosomal Subunit. *Mol. Cell*. **10**, 117-128 (2002).

A Hodel, M Hodel, E Griffis, K Hennig, G Ratner, S Xu, M Powers. The Three-Dimensional Structure of the Autoproteolytic, Nuclear Pore-Targeting Domain of the Human Nucleoporin Nup98. *Mol. Cell*. **10**, 347-358 (2002).

M Hu, P Li, M Li, W Li, T Yao, J Wu, W Gu, R Cohen, Y Shi. Crystal Structure of a UBP-Family Deubiquitinating Enzymen in Isolation and in Complex with Ubiquitin Aldehyde. *Cell*. **111**, 1041-1054 (2002).

Q Huai, H Wang, Y Sun, H Kim, Y Liu, H Ke. Three-dimensional Structures of PDE4D in Complex with Roliprams and Implication on Inhibitor Selectivity. *Structure*. **11**, 865-873 (2003).

M Huang, A Rigby. Structural basis of membrane binding by Gla domains of Vitamine-K dependent proteins. *Nat. Struct. Biol.*. **10** (9), 751 (2003).

Y Huang, M Lemineux, J Song, M Auer, D Wang. Structure and Mechanism of the Glycerol-3-Phosphate Transporter from Escherichia coli. *Science*. **301**, 616-620 (2003).

J Jiang, A Lee, J Chen, V Ruta, M Cadene, B Chait, R MacKinnon. X-ray structure of a voltage-dependent K+ channel. *Nature*. **423**, 33-41 (2003).

S Johnson, J Taylor, L Beese. Processive DNA Synthesis Observed in a Polymerase Crystal Suggests a Mechanism for the Prevention of Frameshift Mutations. *Proc Natl Acad Sci USA*. **100** (7), 3895-3900 (2003).

Z Juo, G Kassavetis, J Wang, E Geiduschek, P Sigler. Crystal structure of a transcription factor IIIB core interface ternary complex. *Nature*. **422**, 534-539 (2003).

L Kang, S Gabelli, M Bianchet, W Xu, M Bessman, L Amzel. Structure of a coenzyme A pyrophosphatase from Deinococcus radiodurans: a member of the Nudix family. *J. Bacteriol.*. **185** (14), 4110-9 (2003).

C Kielkopf, N Rodionova, M Green, S Burley. A Novel Peptide Recognition Mode Revealed by the X-Ray Structure of a Core U2AF 35/U2AF 65 Heterodimer. *Cell*. **106**, 595-605 (2001).

A Klon, A Heroux, L Ross, V Pathak, C Johnson, J Piper, D Borhani. Atomic Structures of Human Dihydrofolate Reductase Complexed with NADPH and Two Lipophilic Antifolates at 1.09 Å and 1.05 Å Resolution. *J. Mol. Biol.*. **320** (3), 677-693 (2002).

F Li, Y Xiong, J Wang, H Cho, K Tomita, A Weiner, T Steitz. Crystal Structures of the Bacillus sterothermophilus CCA-Adding Enzyme and its Complexes with ATP or CTP. *Cell*. **111**, 815-824 (2002).

J Liu, M Lu. An Alanine-Zipper Structure Determined by Long Range Intermolecular Interactions. *J. Biol. Chem.*. **277** (50), 48708-48713 (2002).

E Mains, Y Xiong, M Cocco, L D'Andrea, L Regan. Design of Stable alpha-Helical Arrays from an Idealized TPR Motif. *Structure*. **11** (5), 497-508 (2003).

A Mulichak, C Bonin, W Reiter, R Garavito. Structure of the MUR1 GDP-Mannose 4,6-Dehydratase from Arabidopsis thaliana: Implicatins for Ligand Binding and Specificity. *Biochemistry*. **41**, 15578-15589 (2002).

A Mulichak, H Losey, W Lu, Z Wawrzak, C Walsh, R Garavito. Structure of the TDP-epi-vancosaminyltransferase GtfA from the chloroeremomycin biosynthetic pathway. *Proc Natl Acad Sci USA*. **100** (16), 9238-9243 (2003).

S Nair, S Burley. X-ray Structures of Myc-Max and Mad-Max Recognizing DNA: Molecular Bases of Regulation by Proto-Oncogenic Transcription Factors. *Cell*. **112**, 193-205 (2003).

A Prota, J Campbell, P Schelling, J Forrest, M Watson, T Peters, M Aurrand-Lions, B Imhof, T Dermody, T Stehle. Crystal structure of human junctional adhesion molecule 1: Implications for

reovirus binding. *Proc Natl Acad Sci USA*. **100** (9), 5366-5371 (2003).

S Ray, J Bonanno, K Rajashankar, M Pinho, G He, H De Lencastre, A Tomasz, S Burley. Cocrystal Structures of Diaminopimelate Decarboxylase: Mechanism, Evolution, and Inhibition of an Antibiotic Resistance Accessory Factor. *Structure*. **10**, 1499-1508 (2002).

N Schrader, K Fischer, K Theis, R Mendel, G Schwarz, C Kisker. The Crystal Structure of Plant Sulfite Oxidase Provides Insights into Sulfite Oxidation in Plants and Animals. *Structure*. **11** (10), 1251-1263 (2003).

B Staker, K Hjerrild, M Feese, C Behnke, A Burgin, Jr., L Stewart. The Mechanism of Topoisomerase I Poisoning by a Camptothecin Analog. *Proc Natl Acad Sci USA*. **99** (24), 15387-15392 (2002).

H Walden, M Podgorski, B Schulman. Insights into the Ubiquitin Transfer Cascade from the Structure of the Activating Enzyme for NEDD8. *Nature*. **422**, 330 (2003).

J Wilson, O Matsushita, A Okabe, J Sakon. A Bacterial Collagen-Binding Domain with Novel Calcium-Binding Motif Controls Domain Orientation. *EMBO J.*. **22** (8), 1743-1752 (2003).

J Wu, A Krawitz, J Chai, W Li, F Zhang, K Luo, Y Shi. Structural Mechanism of Smad4 Recognition by the Nuclear Oncoprotein Ski: Insights on Ski-Mediated Repression of TGF-beta Signaling. *Cell*. **111**, 357-367 (2002).

Y Yin, T Steitz. Structural Basis for the Transition from Initiation to Elongation Transcription in T7 RNA Polymerase. *Science*. **298**, 1387 (2002).

F Zalfa, M Giorgi, B Primerano, A Moro, A Di Penta, S Reis, B Oostra, C Bagni. The Fragile X Syndrome Protein FMRP Associates with BC1 RNA and Regulates the Translation of Specific mRNAs at Synapses . *Cell*. **112**, 317-327 (2003).

**Beamline X26A**

A Aerts, B Velde, K Janssens, W Dijkman. Change in Silica Sources in Roman and Post-Roman Glass. *Spectrochim. Acta B*. **58**, 659-667 (2003).

Y Arai, A Lanzirotti, S Sutton, J Davis, D Sparks. Arsenic Speciation and Reactivity in Poultry Litter. *Environ. Sci. Tech.*. **37** (18), 4083-4090 (2003).

M Dyar, M Gunter, J Delaney, A Lanzirotti, S Sutton. Systematics in the structure and XANES spectra of pyroxenes, amphiboles, and micas as derived from oriented single crystals. *Can. Mineral*. **40**, 1375-1393 (2002).

G Flynn, L Keller, S Wirick, C Jacobsen, S Sutton. Analysis of interplanetary dust particles by soft and hard x-ray microscopy. *J. Phys. IV*. **104**, 367-372 (2003).

J Howe, R Loeppert, V Derose, D Hunter, P Bertsch. Localization and Speciation of Chromium in Subterranean Clover Using XRF, XANES, and EPR Spectroscopy. *Environ. Sci. Tech.*. **37** (18), 4091-4097 (2003).

B Jones, C Conko, J Flinn, D Linkous, A Lanzirotti, C Frederickson, P Bertsch, A Friedlich, A Bush. The Effect of enhanced zinc in drinking water on brain and memory. *Natural Science and the Environment:Prescription for a Better Environment*, Vol 1, p. 3, sponsored by USGS. (2003).

K Kehm, G Flynn, S Sutton, C Hohenberg. Combined noble gas and trace element measurements on individual stratospheric interplanetary dust particles. *Meteoritics & Planet. Sci.*. **37** (10), 1323-1335 (2002).

H Li, L Lee, D Schulze, C Guest. Role of Soil Manganese in the Oxidation of Aromatic Amines. *Environ. Sci. Tech.*. **37**, 2686-2693 (2003).

D Linkous, J Flinn, A Lanzirotti, C Frederickson, B Jones, P Bertsch. Use of Synchrotron X-ray Fluorescence to Measure race Metal Distribution in the Brain. *Transactions of the American Geophysical Union*, Vol F202, p. 81, sponsored by American Geophysical Union. (2002).

R Muller, E Weckert, J Zellner, M Drakopoulos. Investigation of Radiation-dose-induced Changes in Organic Light-atom Crystals by Accurate d-spacing Measurements. *J. Synch. Rad.*. **9** (6), 368-374 (2002).

A Neufeld, H Isaacs, I Cole, A Bond, S Furman. Characterisation of salt particle induced corrosion processes by synchrotron generated X-ray fluorescence and complementary surface analysis tools. *199th Electrochemical Society Meeting*, Vol 2001-5, p. 187-196, (2001).

T Punshon, P Bertsch, A Lanzirotti, K McLeod, J Burger. Geochemical signature of contaminated sediment remobilization by spatially resolved X-ray microanalysis of annual rings of Salix nigra. *Environ. Sci. Tech.*. **37**, 1766-1774 (2003).

D Roberts, A Scheinost, D Sparks. Zinc speciation in contaminated soils combing direct and indirect characterization methods. *Geochemical and Hydrological Reactivity of Heavy Metals in Soils*, p. 187-227, Lewis Publishers, Boca Raton. (2003).

D Roberts, R Ford, D Sparks. Kinetics and Mechanisms of Zn Complexation on Metal Oxides using EXAFS Spectroscopy. *J. Colloid Interface Sci.*. **263** (2), 364-376 (2003).

S Sutton, P Bertsch, M Newville, M Rivers, A Lanzirotti, P Eng. Microfluorescence and microtomography analyses of heterogeneous earth and environmental materials. *Applications of Synchrotron Radiation in Low-Temperature Geochemistry and Environmental Science*, p. Chapter 8, Mineralogical Society of America, Washington, D.C. (2002).

T Tokunaga, J Wan, M Firestone, T Hazen, K Olson, D Herman, S Sutton, A Lanzirotti. In situ reduction of chromium(VI) in heavily contaminated soils through organic carbon amendment. *J. Environ. Qual.*. **32**, 1641-1649 (2003).

T Tokunaga, J Wan, T Hazen, E Schwartz, M Firestone, S Sutton, M Newville, K Olson, A Lanzirotti, W Rao. Distribution of Chromium Contamination and Microbial Activity in Soil Aggregates. *J. Environ. Qual.*. **32**, 541-549 (2003).

T Tokunaga, K Olson, J Wan. Moisture characteristics of Hanford gravels: Bulk, grain-surface, and intragranular components. *Vadose Zone J.*. **2**, 322-329 (2003).

J Twilley. Pigment Analyses for the Grave Stelae and Architectural Fragments from Chersonesos. *Color in Ancient Greece: The Role of Color in Ancient Greek Art and Architecture 700 – 31 B.C*, p. 171-178, Lamrakis Research Foundation, Aristotle University, Thessaloniki. (2002).

D Vantelon, A Lanzirotti, B Aeschlimann, D Guenther, A Scheinost, R Kretzschmar. Micro-scale Pb distribution and oxidation in a shooting range soil. *Geochim. Cosmochim. Acta*. **66** (S1), A-799 (2002).

**Beamline X26C**

K Bateman, E Brownie, W Wolodko, M Fraser. Structure of the Mammalian CoA Transferase from Pig Heart. *Biochemistry*. **417**, 14455-14462 (2002).

A Hodel, M Hodel, E Griffis, K Hennig, G Ratner, S Xu, M Powers. The Three-Dimensional Structure of the Autoproteolytic, Nuclear Pore-Targeting Domain of the Human Nucleoporin Nup98. *Mol. Cell*. **10**, 347-358 (2002).

A Kilshtain-Vardi, M Glick, H Greenblatt, A Goldblum, G Shoham. Refined Structure of Bovine Carboxypeptidase A at 1.25 Angstrom Resolution. *Acta Cryst. D*. **59**, 323-333 (2003).

J Liu, J Dai, M Lu. Zinc-Mediated Helix Capping in A Triple-Helical Protein. *Biochemistry*. **42**, 5657-5664 (2003).

D M Himmel, S Gourinath, L Reshetnikova, Y Shen, A G Szent-Gyorgyi, C Cohen. Crystallographic Findings on the Internally-uncoupled and Near-rigor States of Myosin: Further Insights into the Mechanics of the Motor. *Proc Natl Acad Sci USA*. **99** (20), 12645-12650 (2002).

J Min, Q Feng, Z Li, Y Zhang, R Xu. Structure of the Catalytic Domain of Human DOT1L, A Non-SET Domain Nucleosomal Histone Methyltransferase. *Cell*. **112**, 711-723 (2003).

M Rudolph, J Johnson, K Rajagopalan, C Kisker. The 1.2 Angstrom Structure of the Human Sulfite Oxidase Cytochrome b5 Domain. *Acta Cryst. D*. **59**, 1183-1191 (2003).

N Schrader, K Fischer, K Theis, R Mendel, G Schwarz, C Kisker. The Crystal Structure of Plant Sulfite Oxidase Provides Insights into Sulfite Oxidation in Plants and Animals. *Structure*. **11** (10), 1251-1263 (2003).

**Beamline X27C**

Y Cohen, E Thomas. Effect of Defects on the Response of a Layered Block Copolymer to Perpendicular Deformation: One-Dimensional Necking. *Macromolecules*. **36**, 5265-5270 (2003).

G Floudas, P Papadopoulos, H Klok, G Vandermeulen, J Rodriguez-Hernandez. Hierarchical Self-Assembly of Poly(ã-benzyl-L-glutamate)-Poly(ethylene glycol)-Poly(ã-benzyl-L-glutamate) Rod-Coil-Rod Triblock Copolymers. *Macromolecules*. **36**, 3673-3683 (2003).

L Liu, B Hsiao, B Fu, S Ran, S Toki, B Chu, A Tsou, P Agarwal. Structure Changes During Uiaxial Deformation of Ethylene-Based Semicrystalline Ethylene-Propylene Copolymer. 1. SAXS Study. *Macromolecules*. **36**, 1920-1929 (2003).

L Liu, Q Wan, T Liu, B Hsiao, B Chu. Salt-Induced Polymer Gelation and Formation of Nanocrystals in a Polymer-Salt System. *Langmuir*. **18**, 10402-10406 (2002).

S Ran, C Burger, D Fang, X Zong, B Chu, B Hsiao, Y Ohta, K Yabuki, P Cunniff. A Synchrotron WAXD Study on the Early Stages of Coagulation during PBO Fiber Spinning. *Macromolecules*. **35**, 9851 (2002).

R Somani, L Yang, B Hsiao, P Agarwal, H Fruitwala, A Tsou. Shear-Induced Precursor Structures in Isotactic Polypropylene Melt by in-Situ Rheo-SAXS and Rheo-WAXD Studies. *Macromolecules*. **35**, 9096-9104 (2002).

S Toki, B Hsiao. Nature of Strain-Induced Structures in Natural and Synthetic Rubbers Under Stretching. *Macromolecules*. **36**, 5915-5917 (2003).

S Xu, G Offer, J Gu, H White, L Yu. Temperature and Ligand Dependence of Conformation and Helical Order in Myosin Filaments. *Biochemistry*. **42**, 390-401 (2003).

F Yeh, B Hsiao, B Sauer, S Michel, H Siesler. In-Situ Studies of Structure Development During Deformation of a Segmented Poly(urethane-urea) Elastomer. *Macromolecules*. **36**, 1940-1954 (2003).

L Zhu, P Huang, W Chen, X Weng, S Cheng, Q Ge, R Quirk, T Senador, M Shaw, et al.. "Plastic Deformation" Mechanism and Phase Transformation in a Shear-Induced Metastable Hexagonally Perforated Layer Phase of a Polystyrene-b-poy(ethylene oxide) Diblock Copolymer. *Macromolecules*. **36**, 3180-3188 (2003).

**Beamline X28C**

M Brenowitz, M Chance, G Dhavan, K Takamoto. Probing the Structural Dynamics of Nucleic Acid Structure by Quantitive Time-Resolved and Equilibrium Hydroxyl Radical "Footprinting". *Curr. Opin. Struct. Biol.*. **12**, 648-653 (2002).

G Dhavan, M Chance, M Brenowitz. Kinetics Analysis of DNA-Protein Interactions by Time-Resolved Synchrotron X-Ray Footprinting . *Analysis of Macromolecules: A Practical Approach*, p. 75-86, IRL Press at Oxford University Press, Oxford. (2003).

J Kiselar, P Janmey, S Almo, M Chance. Visualizing the Ca2+-dependent activation of gelsolin by using synchrotron footprinting. *Proc Natl Acad Sci USA*. **100** (7), 3942-3947 (2003).

P Rangan, B Masquida, E Westhof, S Woodson. Assembly of Core Helices and Rapid Tertiary Folding of a Small Bacterial Group I Ribozyme. *Proc Natl Acad Sci USA*. **100** (4), 1574-1579 (2003).

H Rashidzadeh, S Khrapunov, M Chance, M Brenowitz. Solution Structure and Interdomain Interactions of the Saccharomyces cerevisiae "TATA Binding Protein" (TBP) Probed by Radiolytic Protein Footprinting. *Biochemistry*. **42**, 3655-3665 (2003).

K Takamoto, Q He, S Morris, M Chance, M Brenowitz. Monovalent Cations Mediate Formation of Native Tertiary Structure of the Tetrahymena Thermophila Ribozyme: Implications for the Kinetics of Folding. *Nat. Struct. Biol.*. **9**, 928-933 (2002).

T Ucida, K Takamoto, Q He, M Chance, M Brenowitz. Multiple Monovalent Ion-Dependent Pathways for the Folding of the L-21 Tetrahymena Thermophila Ribozyme. *J. Mol. Biol.*. **328**, 463-478 (2003).