

The following pages list all publication citations reported to the NSLS in FY 2002 (October 1, 2001 through September 30, 2002). 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 2002 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of journal articles are reported in this list, including premiere journals, peer-reviewed journals and a few that are not peer-reviewed.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 2002, 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	134
Journals, other peer-reviewed	437
Journals, non peer-reviewed	22
<b>Total Journals and Magazines</b>	<b>593</b>
Books/Chapters in Books	14
Published Conference Proceedings	79
Reports: Technical, Formal, Informal	3
Theses/Dissertations	19
Patents	0
<b>Total Misc. Publications</b>	<b>115</b>
<b>Total Citations Listed</b>	<b>708</b>
<b>NSLS VUV User Publications</b>	<b>69</b>
<b>NSLS X-Ray User Publications</b>	<b>584</b>
<b>NSLS Staff Publications</b>	<b>55</b>
	<b>708</b>

## NSLS Users

### Beamline U1A

- S Bent. Attaching Organic Layers to Semiconductor Surfaces. *J. Phys. Chem. B.* **106** (11), 2830-2842 (2002).
- Q Du, N Carrasco, M Teplova, C Wilds, M Egli, Z Huang. Internal Derivatization of Oligonucleotides with Selenium for X-ray Crystallography using MAD. *J. Am. Chem. Soc.* **124** (1), 24-25 (2002).
- G Haehner, R Hofer, I Klingenfuss. Order and Orientation in Self-Assembled Long Chain Alkanephosphate Monolayers. *Langmuir.* **17**, 7047 (2001).
- H Hwu, J Eng, Jr., J Chen. Ni/Pt(111) Bimetallic Surfaces: Unique Chemistry at Monolayer Ni Coverage. *J. Am. Chem. Soc.* **124** (4), 702-709 (2002).
- M Zwahlen, S Tosatti, M Textor, G Haehner. Orientation in Methyl- and Hydroxyl-Terminated Self-Assembled Alkanephosphate Monolayers on Titanium Oxide Surfaces Investigated with Soft X-ray Absorption. *Langmuir.* **18**, 3957 (2002).

### Beamline U2A

- R Angel, D Frost, N Ross, R Hemley. Stabilities and equations of state of dense hydrous magnesium silicates. *Phys. Earth Planet. Interiors.* **127**, 181-196 (2001).
- T Antsygina, K Chishko, Y Freiman, S Tretyak, R Hemley. Analytical approach to mean field theory of the BSP transition in solid hydrogens under pressure. *J. Low Temp. Phys.* **122**, 425-432 (2001).
- B Chen, D Muthu, Z Liu, A Sleight, M Kruger. High-pressure Raman and infrared study of HfW<sub>2</sub>O<sub>8</sub>. *Phys. Rev. B.* **64**, 214111 (2001).
- Y Freiman, S Tretyak, A Jezowski, R Hemley. Self-consistent theory of lattice distortion in solid p-H<sub>2</sub>, o-D<sub>2</sub>, and HD. *J. Low Temp. Phys.* **122**, 537-544 (2001).
- A Goncharov, E Gregoryanz, R Hemley, H Mao. Spectroscopic studies of the vibrational and electronic properties of solid hydrogen to 285 GPa. *Proc Natl Acad Sci USA.* **98**, 14234-14237 (2001).
- A Goncharov, E Gregoryanz, H Mao, R Hemley. Vibrational dynamics of solid molecular nitrogen to megabar pressures. *Low Temp. Phys.* **27**, 866 (2001).
- D Klug, M Zgierski, J Tse, Z Liu, J Kincaid, K Czarnecki, R Hemley. Doping Modes and Dynamics of Model Heme Compounds. *Proc Natl Acad Sci USA.* **99** (20), 12526-12530 (2002).
- M Koch-Mueller, Y Fei, E Hauri, Z Liu. Location and Quantitative Analysis of OH in Coesite. *Phys. Chem. Miner.* **28**, 693 (2001).
- M Koch-Mueller, A Hofmeister, Y Fei, Z Liu. High-pressure IR-spectra and the thermodynamic properties of chloritoid. *Am. Mineral.* **87**, 609-622 (2002).

### Beamline U2B

- R Huang, L Miller, C Carlson, M Chance. Characterization of Bone Mineral Composition in the Proximal Tibia of Cynomolgus Monkeys: The Effect of Ovariectomy and Nandrolone Decanoate Treatment. *Bone*. **30**, 492-497 (2002).
- R Huang. Bone Chemistry of Osteoporosis Revealed by Synchrotron Infrared Microspectroscopy. Ph.D. Thesis. Albert Einstein College of Medicine, Bronx. (2002).
- N Marinkovic, R Huang, P Bromberg, M Sullivan, E Sperber, S Moshe, L Miller, K Jones, E Chouparova, et al.. Center for Synchrotron Biosciences' U2B Beamline: An International Resource for Biological Infrared Spectroscopy. *J. Synch. Rad.* **9**, 189-197 (2002).
- D Wetzels, G Williams. Localized (5  $\mu\text{m}$ ) Probing and Detailed Mapping of Hair with. *Fourier Transform Spectroscopy*, p. 302-305, American Institute of Physics, Woodbury. (1998).

### Beamline U4A

- M Ulrich, R Johnson, J Hong, J Rowe, G Lucovsky, J Quinton, T Madey. Interface electronic structure of Ta<sub>2</sub>O<sub>5</sub>-Al<sub>2</sub>O<sub>3</sub> alloys for Si-field-effect transistor gate dielectric applications. *J. Vac. Sci. Technol., B*. **20** (4), 1732-1738 (2002).

### Beamline U4B

- A Vairavamurthy, S Wang. Organic Nitrogen in Geomacromolecules: Insights on Speciation and Transformation with K-edge XANES Spectroscopy. *Environ. Sci. Tech.* **36** (14), 3050-3056 (2002).

### Beamline U4IR

- P Brierley, B Badeau, P Dumas, M Smith, G Williams. Performance of a rapid-scan vacuum Michelson interferometer. *Rev. Sci. Instrum.* **73** (3), 1595-1598 (2002).
- P Dumas, M Hein, A Otto, B Persson, P Rudolf, R Raval, G Williams. Friction of Molecules on Metallic Surfaces: Experimental Approach using Synchrotron Infrared Spectroscopy. *Surf. Sci.* **433-435**, 797-805 (1999).
- K Nicholson. The Nature of Si-H Bonds in Model Device Interfaces. Ph.D. Thesis. University of Michigan, Ann Arbor. (2002).
- P Rudolf, R Raval, P Dumas, G Williams. Vibrational dynamics of fullerene molecules adsorbed on metal surfaces studied with synchrotron infrared radiation, invited paper. *Appl. Phys. A*. **75** (1), 147-153 (2002).

### Beamline U7A

- D Abraham, R Twisten, M Balasubramanian, I Petrov, J McBreen, K Amine. Surface changes on LiNi<sub>0.8</sub>Co<sub>0.2</sub>O<sub>2</sub> particles during testing of high-power lithium-ion cells. *Electrochem. Commun.* **4**, 620-625 (2002).
- L Andruzzi, A Hexemer, X Li, C Ober, E Kramer, G Galli, E Chiellini. Surface Control Using Polymer Brushes

Produced By Controlled Radical Polymerization. *ACS Symp. Ser.* **43** (2), 76 (2002).

- T Baas, L Gamble, K Hauch, D Castner, T Sasaki. Characterization of a Cysteine-Containing Peptide Tether Immobilized onto a Gold Surface. *Langmuir*. **18**, 4898-4902 (2002).
- M Balasubramanian, H Lee, X Sun, X Yang, A Moodenbaugh, J McBreen, D Fisher, Z Fu. Formation of SEI on Cycled Lithium-Ion Battery Cathodes: Soft X-ray Absorption Study. *Electrochem. Solid-State Lett.* **5** (1), A22-25 (2002).
- R Bhat, D Fischer, J Genzer. Fabricating Planar Nanoparticle Assemblies with Number Density Gradients. *Langmuir*. **18**, 5640-5643 (2002).
- R Bubeck, J Li, P Dvornic, A Hexemer, X Li, L Andruzzi, D Fischer. NEXAFS of Poly(amidoamine-organosilicon) (PAMAMOS) Dendrimer Network Nanocomposites. *American Physical Society*, Vol 47, p. 210, (2002).
- Z Chang, Z Song, G Liu, J Rodriguez, J Hrbek. Synthesis, electronic and chemical properties of MoO<sub>x</sub> clusters on Au(111). *Surf. Sci.* **512** (1-2), L353 (2002).
- K Efimenko, B Novick, R Carbonell, J DeSimone, J Genzer. Formation of Self-Assembled Monolayers of Semifluorinated and Hydrocarbon Chlorosilane Precursors on Silica Surfaces from Liquid Carbon Dioxide. *Langmuir*. **18**, 6170-6179 (2002).
- K Efimenko, J Genzer. How to prepare tunable planar molecular chemical gradients. *Advanced Materials*. **13**, 1560 (2001).
- C Evans, A Smith, D Burnett, A Marsh, D Fischer, J Gland. Polymer Conversion Measurement of Diacetylene-Containing Thin Films and Monolayers Using Soft X-ray Fluorescence Spectroscopy. *J. Phys. Chem. B*. **106**, 9036-9034 (2002).
- D Fischer, S Sambasivan, A Kuperman, Y Platonov, J Wood. Multilayer mirror fluorescence detection system for photon-in photon-out in-situ carbon K-edge NEXAFS. *Synch. Rad. News*. **15**, 16-20 (2002).
- D Fischer, S Sambasivan, A Kuperman, Y Platonov, J Wood. Focusing Multilayer Mirror Detection System for Carbon K edge Soft X-ray Absorption Spectroscopy. *Rev. Sci. Instrum.* **73**, 1469-1475 (2002).
- L Gamble, B Ravel, D Fischer, D Castner. Surface Structure and Orientation of PTFE Films Determined by Experimental and FEFF8-Calculated NEXAFS Spectra. *Langmuir*. **18** (6), 1963-1967 (2002).
- J Lenhart, E Lin, C Soles, R Jones, W Wu, D Fischer, S Sambasivan, D Goldfarb, M Angelopoulos. Probing Surface and Bulk Deprotection in Resist Films using NEXAFS. *ACS Div. Poly. Mat.: Sci. and Eng*, Vol 87, p. 417, sponsored by American Chemical Society. (2002).
- X Li, L Andruzzi, E Chiellini, G Galli, C Ober, A Hexemer, E Kramer, D Fischer. Semifluorinated Aromatic Side-Chain Polystyrene-Based Block Copolymers: Bulk Structure and Surface Orientation Studies. *Macromolecules*. **35** (21), 8078 (2002).
- G Liu, J Rodriguez, J Dvorak, J Hrbek, T Jirsak. Chemistry of sulfur-containing molecules on Au(111): thiophene, sulfur dioxide, and methanethiol adsorption. *Surf. Sci.* **505**, 295-307 (2002).

- G Liu, J Rodriguez, Z Chang, J Hrbek, L Gonzalez. Adsorption of Methanethiol on Stoichiometric and Defective TiO<sub>2</sub>(110) Surfaces: A Combined Experimental and Theoretical Study. *J. Phys. Chem. B.* **106**, 9883-9891 (2002).
- J Rodriguez, G Liu, T Jirsak, J Hrbek, Z Chang, J Dvorak, A Maiti. Activation of Gold on Titania: Adsorption and Reaction of SO<sub>2</sub> on Au/TiO<sub>2</sub>(110). *J. Am. Chem. Soc.* **124** (18), 5242-5250 (2002).
- J Rodriguez. Electronic and chemical properties of palladium in bimetallic systems: How much do we know about heteronuclear metal-metal bonding?. *The Chemical Physics of Solid Surfaces: Surface Alloys and Alloy Surfaces*, p. 343, Elsevier, Amsterdam. (2002).
- J Rodriguez, J Hrbek, Z Chang, J Dvorak, T Jirsak, A Maiti. Importance of O vacancies in the behavior of oxide surfaces: Adsorption of Sulfur on TiO<sub>2</sub>(110). *Phys. Rev. B.* **65** (23), 235414 (2002).
- J Rodriguez. Environmental Catalysis and The Chemistry of SO<sub>2</sub> on Oxide Surfaces. *Ciencia.* **9**, 139 (2001).
- J Rodriguez, J Hrbek. Interaction of sulphur with bimetallic surfaces: Effects of Structural, electronic and chemical properties. *The Chemical Physics of Solid Surfaces: Surface Alloys and Alloy Surfaces*, p. 374, Elsevier, Amsterdam. (2002).
- J Rodriguez, T Jirsak, L Gonzalez, J Evans, M Perez, A Maiti. Reaction of SO<sub>2</sub> with pure and metal-doped MgO: Basic principles for the cleavage of S-O bonds. *J. Chem. Phys.* **115**, 10914 (2001).
- T Wu, K Efimenko, J Genzer. Combinatorial Study of the Mushroom-to-brush crossover in surface anchored polyacrylamide. *J. Am. Chem. Soc.* **124**, 9394 (2002).
- Z Yang, R Wu, J Rodriguez. First-Principles Study of the Adsorption of Sulfur on Pt(111): S Core-level Shifts and the Nature of the Pt-S Bond. *Phys. Rev. B: Condens. Matter.* **65**, 155409 (2002).
- Y Zhu, A Moodenbaugh, G Schneider, J Davenport, T Vogt, Q Li, G Gu, D Fischer, J Tafto. Unraveling the Symmetry of the Hole States near the Fermi Level in the MgB<sub>2</sub> Superconductor. *Phys. Rev. Lett.* **88** (24), 247002-1 (2002).
- Beamline U7B**
- S Park, H Gies, B Toby, J Parise. Characterization of a New Microporous Lithozincosilicate with ANA Topology. *Chem. Mater.* **14**, 3187-3196 (2002).
- Beamline U8B**
- K Miller, C John, K Zhang, K Nicholson, F McFeely, M Banaszak Holl. Self-limiting chemical vapor deposition of an ultra-thin silicon oxide film using tri-(tert-butoxy)silanol. *Thin Solid Films.* **397** (1-2), 78-82 (2001).
- K Nicholson. The Nature of Si-H Bonds in Model Device Interfaces. Ph.D. Thesis. University of Michigan, Ann Arbor. (2002).
- K Nicholson, K Zhang, M Banaszak Holl, F McFeely, G Calzaferri, U Pernisz. Formation of Mixed Layers Derived from Functional Silicon Oxide Clusters on Gold. *Langmuir.* **17** (25), 7879-7885 (2001).
- T Owens, K Nicholson, M Banaszak Holl, S Szer. Formation of Alkylsilane based Monolayers on Gold. *J. Am. Chem. Soc.* **124** (24), 6800-6801 (2002).
- S Sayan, E Garfunkel, S Szer. Soft x-ray photoemission studies of the HfO<sub>2</sub>/SiO<sub>2</sub>/Si system. *Appl. Phys. Lett.* **80** (12), 2135-2137 (2002).
- K Schneider, T Owens, K Nicholson, B Ludwig, J Greeley, B Orr, M Banaszak Holl. Investigation of Hydridosilsesquioxane-Based Silicon Oxide Deposition on Si(111)-7×7. *Langmuir.* **18** (16), 6233-6241 (2002).
- Beamline U9B**
- M Baniecki, W Mcgrath, S Mcwhirter, C Li, D Toledo, P Pellicena, D Barnard, K Thorn, W Mangel. Interaction of the human adenovirus proteinase with its 11-amino acid cofactor pVlc. *Biochemistry.* **40**, 12349-56 (2001).
- J Sutherland. Simultaneous measurement of circular dichroism and fluorescence polarization anisotropy. *Clinical Diagnostic Systems: Technologies and Instrumentation*, Vol 4625, p. 126-136, sponsored by Proceedings of SPIE. (2002).
- Beamline U10A**
- J Tu, G Carr, V Perebeinos. Optical Properties of c-Axis Oriented Superconducting MgB<sub>2</sub> Films. *Phys. Rev. Lett.* **87**, 277001 (2001).
- Beamline U10B**
- M Jaime Vasquez, G Halada, C Calyton, J Longtin. On the Nature of the Chromate Conversion Coating Formed on Intermetallic Constituents of AA2024-T3. *Surf. Interface Anal.* **33** (7), 607-616 (2001).
- M Jaime Vasquez, G Halada, C Clayton. The Application of Synchrotron-based Spectroscopic Techniques to the Study of Chromate Conversion Coatings. *Electrochim. Acta.* **47** (19), 3105-3115 (2002).
- L Keller, S Hony, J Bradley, F Molster, L Waters, J Bouwman, A deKoter, D Brownlee, G Flynn, et al.. Identification of Iron Sulphide Grains in Protoplanetary Disks. *Nature.* **417**, 148-150 (2002).
- L Kreplak, F Briki, Y Duvault, J Doucet, C Merigoux, F Leroy, J Leveque, L Miller, G Carr, et al.. Profiling lipids across Caucasian and African-American hair transverse cuts, using synchrotron infrared microspectrometry. *Int. J. Cosmetic Sci.* **23** (6), 369-374 (2001).
- J Tetenbaum, L Miller. A new spectroscopic approach to examining the role of disulfide bonds in the Structure and Unfolding of Soybean Trypsin Inhibitor. *Biochemistry.* **40**, 12215-19 (2001).
- M Vasquez, G Halada, C Clayton, J Longtin. Composition of Surface Treated Thin Films Analogs of Intermetallic Constituents in AA2024-T3. *Corrosion and Corrosion Prevention of Low Density Metal and Alloys*, Vol PV2000-23, p. 57-68, sponsored by The Electrochemical Society. (2001).

M Vasquez, G Halada, C Clayton. Composition of Chromate Conversion Coatings Formed on multilayered Thin Films of AA2024-T3 matrix and Al<sub>2</sub>Cu, Al<sub>2</sub>CuMg and Al<sub>20</sub>Cu<sub>2</sub>(FeMn).. Vol PV2001-22, p. 444-453, (2001).

#### Beamline U12A

D Mullins, S Overbury. Coverage Dependent Dissociation of NO on Rh Supported on Cerium Oxide Thin Films. *Surf. Sci.* **511**, L293 - L297 (2002).

D Mullins, K Zhang. Metal - Support Interactions between Pt and Thin Film Cerium Oxide. *Surf. Sci.* **513**, 163 - 173 (2002).

#### Beamline U12B

P Cebe, G Georgiev, P Dai, M Capel. Structural Studies of Polymers Using Small Angle X-ray Scattering and Optical Ellipsometry. *Proceedings of the American Crystallographic Association*, p. 70, (2001).

P Cebe, P Dai, G Georgiev, B Feinberg, N Gilfoy. X-ray diffraction and optical ellipsometry: Complementary techniques for study of polymer structure. *Poly ACS, Polymer Preprints*, Vol 43, (2001).

#### Beamline U12IR

S Kramer. Direct Observation of Beam Impedance Above Cut-off. *Phys. Rev. ST AB*. **5**, 112001-1 (2002).

R Lobo, J LaVeigne, D Reitze. Subnanosecond, time-resolved, broadband infrared spectroscopy using synchrotron radiation. *Rev. Sci. Instrum.* **73** (1), 1 (2002).

#### Beamline U13UB

A Fedorov, T Valla, F Liu, P Johnson, M Weinert, P Allen. Spin-Resolved Photoemission Study of Photohole Lifetimes in Ferromagnetic Gadolinium. *Phys. Rev. B*. **65**, 212409 (2002).

T Valla, P Johnson, Z Yusof, B Wells, Q Li, S Loureiro, R Cava, M Mikami, Y Mori, et al.. Coherence-Incoherence and Dimensional Crossover in Layered Strongly Correlated Metals. *Nature*. **417**, 627-630 (2002).

Z Yusof, B Wells, T Valla, A Fedorov, P Johnson, Q Li, C Kendziora, S Jian, D Hinks. Quasiparticle Liquid in Highly Overdoped Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8+delta</sub>. *Phys. Rev. Lett.* **88** (16), 167006 (2002).

#### Beamline U16B

M Butterfield, R Bartynski, S Hulbert. Pd M<sub>45</sub>VV Auger Spectrum Determined by Auger-Photoelectron Coincidence Spectroscopy: Intrinsic Line Shape and Coster-Kronig Transitions. *Phys. Rev. B*. **66**, 115115 (2002).

#### Beamline X1A1

M Carlucci-Dayton. Nomarski Differential Phase Contrast Using a Scanning Transmission X-ray Microscope. MSI Thesis. Dept. Physics & Astronomy, SUNY Stony Brook, Stony Brook. (2000).

F Claret, A Bauer, T Schaefer, L Griffault, B Lanson. Experimental investigation of the interaction of clays with high pH solutions: A case study from the future French underground laboratory. *Clays and Clay Minerals*. **50**, 632-645 (2002).

T Coffey, S Urquhart, H Ade. Characterization of the Effects of Soft X-ray Irradiation on Polymers. *J. Electron. Spectrosc. Relat. Phenom.* **122** (1), 65-78 (2002).

M Feser. Scanning Transmission X-ray Microscopy With a Segmented Detector. Ph.D. Thesis. SUNY Stony Brook, Stony Brook. (2002).

A Hitchcock, I Koprinarov, T Tyliczszak, E Rightor, G Mitchell, M Dineen, F Hayes, W Lidy, R Priester, et al. Optimization of scanning transmission X-ray microscopy for the identification and quantitation of reinforcing particles in polyurethanes. *Ultramicroscopy*. **88** (1), 33-49 (2001).

A Kalukin, B Winn, Y Wang, C Jacobsen, Z Levine, J Fu. Calibration of high-resolution X-ray tomography with atomic force microscopy. *J. Res - NIST*. **105** (6), 867-874 (2000).

K Kaznacheyev, A Osana, C Jacobsen, O Plashkevych, O Vahtras, H Agren, V Carravetta, A Hitchcock. Innershell absorption Spectroscopy of amino acids. *J. Phys. Chem. A*. **106** (13), 3153-3168 (2002).

G Mitchell, L Wilson, M Dineen, S Urquhart, F Hayes, E Rightor, P Hitchcock, H Ade. Quantitative Characterization of Microscopic Variations in the Cross-Link Density of Gels. *Macromolecules*. **35** (4), 1336-1341 (2002).

A Osanna. Soft x-ray spectromicroscopy in a cryo scanning transmission x-ray microscope. Ph.D. Thesis. Dept. Physics & Astronomy, SUNY Stony Brook, Stony Brook. (2000).

M Plaschke, J Rothe, T Schaefer, M Denecke, K Dardenne, S Pompe, K Heise. Combined AFM and STXM in situ study of the influence of Eu(III) on the agglomeration of humic acid. *Coll. Surf. A*. **197** (1-3), 245-256 (2002).

E Rightor, S Urquhart, A Hitchcock, H Ade, A Smith, G Mitchell, R Priester, A Aneja, G Appel, et al. Identification and Quantitation of Urea Precipitates in Flexible Polyurethane Foam Formulations by X-ray Spectromicroscopy. *Macromolecules*. **35**, 5873-5882 (2002).

A Scheinost, R Kretzschmar, I Christl, C Jacobsen. Carbon group chemistry of humic and fulvic acid: A comparison of C-1s NEXAFS and <sup>13</sup>C-NMR spectroscopies. *Humic Substances: Structures, Models and Functions*, p. 37-45, Royal Society of Chemistry, Cambridge. (2001).

A Smith, S Urquhart, D Winesett, G Mitchell, H Ade. Use of near edge X-ray absorption fine structure spectromicroscopy to characterize multicomponent polymeric systems. *Appl Spectrosc.* **55** (12), 1676-1681 (2001).

- Y Wang. Three-dimensional imaging in soft x-ray microscopy. Ph.D. Thesis. Dept. Physics & Astronomy, SUNY Stony Brook, Stony Brook. (1998).
- Y Zhang, S Ge, B Tang, T Koga, M Rafailovich, J Sokolov, D Peiffer, Z Li, A Dias, et al. Effect of carbon black and silica fillers in elastomer blends. *Macromolecules*. **34** (20), 7056-7065 (2001).

#### Beamline X1B

- P Abbamonte, L Venema, A Rusydi, G Logvenov, I Bozovic, G Sawatzky. A Structural Probe of the Doped Holes in Cuprates Superconductors. *Science*. **297**, 581-584 (2002).
- E Rennie, U Hergenbahn, O Kugeler, A Rüdél, S Marburger, A Bradshaw. A Core-Level Photoionization Study of Furan. *J. Chem. Phys.* **117** (14), 6524-6532 (2002).
- P Ryan, C McGuinness, J Downes, K Smith, D Doppalapudi, T Moustakas. Band-gap evolution, hybridization and thermal stability of In<sub>1-x</sub>Ga<sub>x</sub>N alloys studied by soft x-ray emission and absorption. *Phys. Rev. B*. **65** (20), 5201 (2002).
- T Schitt, L Duda, A Augustsson, J Guo, J Nordgren, J Downes, C McGuinness, K Smith, G Dhalenne, et al. Resonant soft x-ray emission spectroscopy of V<sub>2</sub>O<sub>3</sub>, VO<sub>2</sub> and NaV<sub>2</sub>O<sub>5</sub>. *Surf. Rev. Lett.* **9** (2), 1369-1374 (2002).

#### Beamline X2B

- G Wu, B Rodrigues, P Coppens. The correction of reflection intensities for incomplete absorption of high energy X-rays in the CCD phosphor. *J. Appl. Cryst.* **35**, 356-359 (2002).

#### Beamline X3A1

- C Kim, S Pillet, G Wu, W Fullagar, P Coppens. Excited state structure by time-resolved X-ray diffraction. *Acta Cryst. A*. **58**, 133-137 (2002).
- T Koritsanszky, P Coppens. Chemical applications of X-ray charge density analysis. *Chem. Rev.* **101**, 1583-1628 (2001).
- X Li, G Wu, Y Abramov, A Volkov, P Coppens. Application of charge density methods to a protein model compound: calculation of coulombic intermolecular interaction energies from the experimental charge density. *Proc Natl Acad Sci USA*. **99** (19), 12132-12137 (2002).
- G Wu, B Rodrigues, P Coppens. The correction of reflection intensities for incomplete absorption of high energy X-rays in the CCD phosphor. *J. Appl. Cryst.* **35**, 356-359 (2002).

#### Beamline X3A2

- M Gelfer, A Waddon, K Schmidt-Rohr, R Gale, L Kleiner, R Bergren. Annealing-induced Increase of Permeability and Amorphous-Phase Mobility in Ethylene-Vinylacetate Copolymer. *J. Polym. Sci., Part B: Polym. Phys.* **39**, 2774-2779 (2002).

- S Ran, X Zong, D Fang, B Hsiao, B Chu, P Cuniff, R Phillips. Studies of the mesophase development in polymeric fibers during deformation by synchrotron SAXS/WAXD. *J. Mater. Sci.* **36**, 3071-3077 (2001).
- R Seright, J Liang, B Lindquist, J Dunsmuir. Characterizing Disproportionate Permeability Reduction Using Synchrotron X-Ray Computed Microtomography. *Soc. Petrol. Eng. J. Reservoir Evaluation and Engineering*. **5** (5), 355-364 (2002).

#### Beamline X3B1

- D Balzar, H Ledbetter, P Stephens, E Park, J Routbort. Dislocation-density changes upon poling of polycrystalline BaTiO<sub>3</sub>. *Phys. Rev. B*. **59**, 3414-3420 (1999).
- D Bohle, A Kosar, P Stephens. Phase homogeneity and crystal morphology of the malaria pigment beta-hematin. *Acta Cryst. D*. **58**, 1752-1756 (2002).
- C Botez, W Elliot, P Miceli, P Stephens. Vacancy formation in homoepitaxially grown Ag films and its effect on surface morphology. *Phys. Rev. B*. **66**, 075418 (2002).
- M Bushey, A Hwang, P Stephens, C Nuckolls. The consequences of chirality in crowded arenes - Macromolecular helicity, hierarchical ordering, and directed assembly. *Angew. Chem. Int. Ed.* **41**, 2828-2831 (2002).
- R Dinnebier, S Vensky, M Jansen, P Stephens. The First Crystallographic Proof of the Peroxodicarbonate Anion in K<sub>2</sub>[C<sub>2</sub>O<sub>6</sub>] from Powder Diffraction Data. *Z. Kristallogr.* **19** (Suppl. Issue), 42 (2002).
- R Dinnebier, S Jelonek, J Sieler, P Stephens. The solid state structures of K salicylate and Rb salicylate by high resolution X-ray powder diffraction. *Z. Anorg. Allg. Chem.* **628** (2), 363-368 (2001).
- R Dinnebier, H Lerner, L Ding, K Shankland, W David, P Stephens, M Wagner. One-Dimensional Spin Chains from CuII Ions and 2,5-Bis(pyrazol-1-yl)-1,4-dihydroxybenzene. *Z. Anorg. Allg. Chem.* **628** (1), 310-314 (2002).
- R Dinnebier, L Ding, K Mab, M Neumann, N Tanpipat, F Leusen, P Stephens, M Wagner. Crystal Structure of a Rigid Ferrocene-based Macrocycle from High Resolution X-ray Powder Diffraction. *Organometallics*. **20**, 5642-5647 (2001).
- R Dinnebier, O Gunnarsson, H Brumm, E Koch, P Stephens, A Huq, M Jansen. Structure of Haloform Intercalated C<sub>60</sub> and its Influence on Superconductive Properties. *Science*. **296**, 109-113 (2002).
- R Dinnebier, S Vensky, P Stephens, M Jansen. Crystal Structure of K<sub>2</sub>[C<sub>2</sub>O<sub>6</sub>] - First Proof of existence and Constitution of a Peroxodicarbonate Ion. *Angew. Chem. Int. Ed.* **41** (11), 1922-1924 (2002).
- A Hoennerscheid, R Dinnebier, M Jansen. Reversible Dimerization of C<sub>60</sub> molecules in the Crystal Structure of Bis(arene)chromium Fulleride Cr(C<sub>7</sub>H<sub>8</sub>)<sub>2</sub>C<sub>60</sub>. *Acta Cryst. B*. **B58**, 482-488 (2002).
- A Huq, P Stephens, G Bendele, R Ibberson. Polymeric fullerene chains in RbC<sub>60</sub> and KC<sub>60</sub>. *Chem. Phys. Lett.* **347**, 13-22 (2001).

- J Kaduk. Terephthalate salts of dipositive cations. *Acta Cryst. B.* **58**, 815-822 (2002).
- P Karen, P Woodward, P Santosh, T Vogt, P Stephens, S Pagola. Verwey transition under oxygen loading in R<sub>Ba</sub>Fe<sub>2</sub>O<sub>5+w</sub> (R=Nd and Sm). *J. Solid State Chem.* **167**, 480-493 (2002).
- G Kioseoglou, S Kim, Y Soo, X Chen, H Luo, Y Kao, Y Sasaki, X Liu, J Furdyna. Investigation of nanoscale structure in digital layers of Mn/GaAs and MnGa/GaAs. *Appl. Phys. Lett.* **80**, 1150 (2002).
- H Kisch, B Eisen, R Dinnebier, K Shankland, W David, F Knoch. Chiral Metal Dithiolene - Viologen Ion Pairs - Synthesis and Electrical Conductivity. *Chem. Eur. J.* **7** (3), 738-748 (2001).
- M Nyman, A Tripathi, J Parise, R Maxwell, T Nenoff. Sandia Octahedral Molecular Sieves (SOMS): Structural and Property Effects of Charge-Balancing the MIV-Substituted (M = Ti, Zr) Niobate Framework. *J. Am. Chem. Soc.* **124** (8), 1704-1713 (2002).
- S Schlecht, R Dinnebier, K Friese. Mild Direct Synthesis of Organofunctionalized Alkyltin Bromides [X?(CH<sub>2</sub>)<sub>n</sub>?]<sub>2</sub>SnBr<sub>2</sub> (X=Cl,CN, COOCH<sub>3</sub>; n=2-4) from the Activated Element - Crystal Structure of (H<sub>3</sub>COOCC<sub>2</sub>H<sub>4</sub>)<sub>2</sub>SnBr<sub>2</sub>. *Z. Anorg. Allg. Chem.* **628** (4), 725-727 (2002).
- Y Soo, G Kioseoglou, S Kim, Y Kao, P Sujatha Devi, J Parise, R Gambino, P Gouma. Local Environment Surrounding Magnetic Impurity Atoms in a Structural Phase Transition of Co-Doped TiO<sub>2</sub> Nanocrystal Ferromagnetic Semiconductors. *Appl. Phys. Lett.* **81**, 655-657 (2002).
- Y Soo, G Kioseoglou, S Kim, X Chen, H Luo, Y Kao, Y Sasaki, X Liu, J Furdyna. Studies of Mn/GaAs Digital Alloys Using X-ray Absorption Fine Structure and X-ray. *Appl. Phys. Lett.* **80**, 2654 (2002).
- P Stephens, D Cox. Structure solution from powder diffraction at the National Synchrotron Light Source. Brookhaven National Laboratory, Upton. Prepared for U.S. Department of Energy. (1998).
- P Stephens, D Cox, A Fitch. Synchrotron radiation powder diffraction. *Structure Determination by Powder Diffraction*, p. 49-87, Oxford University Press, Oxford. (2002).
- P Stephens. Phenomenological model of anisotropic peak broadening in powder diffraction. *J. Appl. Cryst.* **32**, 281-289 (1999).
- C Tedesco, R Dinnebier, F Olbrich, S van Smaalen. The Disordered Crystal Structure of Pentamethylcyclopentadienylsodium NaCp\* as seen by High Resolution X-ray Powder Diffraction. *Acta Cryst. B.* **57**, 673-679 (2001).
- A Vecchione, M Gombos, S Pace, L Marchese, G Cerrato, C Tedesco, P Stephens, C Noce. Crystal structure and morphology of the NdSr<sub>2</sub>RuCu<sub>2</sub>Oy compound. *Eur. Phys. J. B.* **26**, 51-55 (2002).
- R von Dreele. Combined Rietveld and stereochemical restraint refinement of a protein crystal structure. *J. Appl. Cryst.* **32**, 1084-1089 (1999).
- R von Dreele. Binding of n-acetylglucosamine to Chicken Egg Lysozyme: A Powder Diffraction Study. *Acta Cryst. D.* **57**, 1836-1842 (2001).
- Beamline X4A**
- N Armstrong, E Gouaux. Mechanisms for Activation and Antagonism of an AMPA-Sensitive Glutamate Receptor: Crystal Structures of the GluR2 Ligand Binding Core. *Neuron.* **28**, 165-181 (2000).
- J Arndt, B Hao, V Ramakrishnan, T Cheng, M Chan. Crystal Structure of Novel Carboxypeptidase from the Hyperthermophilic Archaeon *Pyrococcus furiosus*. *Structure.* **10**, 41-50 (2002).
- R Batra, R Khayat, L Tong. Molecular mechanism for dimerization to regulate the catalytic activity of human cytomegalovirus protease. *Nat. Struct. Biol.* **8**, 810-817 (2001).
- V Bernier-Villamor, D Sampson, M Matunis, C Lima. Structural Basis for E2-Medicated SUMO Conjugation Revealed by a Complex Between Ubiquitin-Conjugating Enzyme Ubc9 and RanGAP1. *Cell.* **108**, 345-356 (2002).
- T Boggon, J Murray, S Chappuis-Flament, E Wong, B Gumbiner, L Shapiro. C-Cadherin Ectodomain Structure and Implications for Cell Adhesion Mechanisms. *Science.* **296** (5571), 1308-1313 (2002).
- R Bryk, C Lima, H Erdjument-Bromage, P Tempst, C Nathan. Metabolic Enzymes of Mycobacteria Linked to Antioxidant Defense by a Thioredoxin-Like Protein. *Science.* **295**, 1073-1077 (2002).
- J Buglino, V Shen, P Hakimian, C Lima. Structural and Biochemical Analysis of the Obg GTP Binding Protein. *Structure.* **10**, 51-62 (2002).
- S Charnock, I Brown, J Turkenburg, G Black, G Davies. Convergent Evolution Sheds Light on the Anti-beta-Elimination Mechanism Common to Family 1 and 10 Polysaccharide Lyases. *Proc Natl Acad Sci USA.* **99** (19), 12067-12072 (2002).
- T Chiu, C Sohn, R Dickerson, R Johnson. Testing Water-mediated DNA Recognition by the Hin Recombinase. *EMBO J.* **21**, 801-814 (2002).
- H Cho, D Leahy. Structure of the extracellular region of HER3 reveals an interdomain tether. *Science.* **297**, 1330-3 (2002).
- C Dann, J Hsieh, A Rattner, D Sharma, J Nathans, D Leahy. Insights into Wnt binding and signaling from the structure of two Frizzled cysteine-rich domains. *Nature.* **412**, 86-90 (2001).
- S Favelukis, J Till, S Hubbard, W Miller. Structure and autoregulation of the insulin-like growth factor 1 receptor kinase. *Nat. Struct. Biol.* **8** (12), 1058-1063 (2001).
- A Ferguson, R Chakraborty, B Smith, L Esser, D van der Helm, J Deisenhofer. Structural basis of gating by the outer membrane transporter FecA. *Science.* **295**, 1715-1719 (2002).
- C Garvie, J Hagman, C Wolberger. Structural Studies of Ets-1/Pax5 Complex Formation on DNA. *Mol. Cell.* **8** (6), 1267-1276 (2001).
- K Hakansson, C Miller. Structure of peptidase T from *Salmonella typhimurium*. *Eur. J. Biochem.* **269** (2), 443-50 (2002).
- B Hao, C Isaza, J Arndt, M Soltis, M Chan. Structure-based mechanism of O<sub>2</sub> sensing and ligand discrimination by the FixL heme domain of *Bradyrhizobium japonicum*. *Biochemistry.* **41** (43), 12952-8 (2002).

- B Hao, W Gong, T Ferguson, C James, J Krzycki, M Chan. A new UAG-encoded residue in the structure of a methanogen methyltransferase. *Science*. **296**, 1462 (2002).
- D Ho, G Coburn, Y Kang, B Cullen, M Georgiadis. The Crystal Structure and Mutational Analysis of a Novel RNA-Binding Domain Found in the Human Tap Nuclear mRNA Export Factor. *Proc Natl Acad Sci USA*. **99**, 1888-1893 (2002).
- A Hogner, J Kastrop, R Jin, T Liljefors, M Mayer, J Egebjerg, I Larsen, E Gouaux. Structural Basis of AMPA Receptor Activation and Ligand Selectivity. *J. Mol. Biol.* **322**, 93-109 (2002).
- J Hunt, S Weinkauff, L Henry, J Fak, P McNicholas, D Oliver, J Deisenhofer. Nucleotide Control of Interdomain Interactions in the Conformational Reaction Cycle of SecA. *Science*. **297**, 2018-2026 (2002).
- G Jogl, Y Shen, D Gebauer, J Li, K Wiegmann, H Kashkar, M Kronke, L Tong. Crystal Structure of the BEACH Domain Reveals an Unusual Fold and Extensive Association with a Novel PH Domain. *EMBO J.* **21** (18), 4785-4795 (2002).
- J Keift, K Zhou, A Grech, R Jubin, J Doudna. Crystal Structure of an RNA Tertiary Domain Essential to HCV IRES-Mediated Translation Initiation. *Nat. Struct. Biol.* **9**, 370-374 (2002).
- R Khayat, R Batra, M Massariol, L Lagace, L Tong. Investigating the role of histidine 157 in the catalytic activity of human cytomegalovirus protease. *Biochemistry*. **40**, 6344-6351 (2001).
- M Kumar, M Carson, M Hussain, H Krishna. Structures of Apolipoprotein A-II and a Lipid-Surrogate Complex Provide Insights into Apolipoprotein-Lipid Interactions. *Biochemistry*. **41**, 11681-11691 (2002).
- C Lima. Analysis of the E. coli NifS CsdB Protein at 2.0Å Reveals the Structural Basis for Perselenide and Persulfide Intermediate Formation. *J. Mol. Biol.* **315**, 1199-1208 (2002).
- M Marino, M Banerjee, R Jonquieres, P Cossart, P Ghosh. GW domains of the L. monocytogenes invasion protein InlB are SH3-like and mediate binding to host ligands. *EMBO J.* **21**, 5623-5634 (2002).
- S Patenaude, N Seto, S Borisova, A Szpacenko, S Marcus, M Palcic, S Evans. The Structural Basis for Specificity in Human ABO(H) Blood Group Biosynthesis. *Nat. Struct. Biol.* **9** (9), 685-690 (2002).
- Y Sun, R Olson, M Horning, N Armstrong, M Mayer, E Gouaux. Mechanism of Glutamate Receptor Desensitization. *Nature*. **417**, 245-253 (2002).
- J Truglio, K Theis, S Leimkuhler, R Rappa, K Rajagopalan, C Kisker. Crystal Structures of the Active and Alloxanthine-Inhibited Forms of Xanthine Dehydrogenase from *Rhodobacter capsulatus*. *Structure*. **10** (1), 115-125 (2002).
- H Yang, P Jeffrey, J Miller, E Kinnucan, Y Sun, N Thoma, N Zheng, P Chen, N Zheng, et al. BRCA2 Function in DNA Binding and Recombination from a BRCA2-DSS1-ssDNA Structure. *Science*. **297**, 1837-1848 (2002).
- H Ye, J Arron, B Lamothe, M Cirilli, T Kobayashi, N Shevde, D Segal, O Dzivenu, M Volgododskaia, et al.. Distinct molecular mechanism for initiating TRAF6 signalling.. *Nature*. **418**, 443-7 (2002).
- R Zhao, E Collins, R Bourret, R Silversmith. Structure and Catalytic Mechanism of the E. Coli Chemotaxis Phosphatase CheZ. *Nat. Struct. Biol.* **9** (8), 570-575 (2002).
- X Zhao, S Ghaffari, H Lodish, V Malashkevich, P Kim. Structure of the Bcr-Abl Oncoprotein Oligomerization Domain. *Nat. Struct. Biol.* **9**, 117-120 (2002).
- N Zheng, B Schulman, L Song, J Miller, P Jeffrey, P Wang, C Chu, D Koepp, S Elledge, et al. Structure of the Cul1-Rbx1-Skp1-F boxSkp2 SCF ubiquitin ligase complex. *Nature*. **416**, 703-709 (2002).

#### Beamline X5A

- K Hicks, K Ardashev, M Blecher, A Caracappa, A Cichocki, C Commeaux, A D'Angelo, J Dideliz, R Deininger, et al.. Neutral pion production from deuterium at the LEGS facility. *Int'l symposium on electromagnetic interactions in nuclear and hadron physics*, Vol 2001, (2001).
- M Lowry, F Lincoln, L Miceli, T Saitoh, A Sandorfi, X Wei, C Whisnant. Progress on the LEGS polarized HD target. *Int'l workshop on polarized beams and polarized targets, PST 2001*, Vol Sept 2001, (2001).
- A Sandorfi, G Blanpied, M Blecher, A Caracappa, C Djalali, G Giordano, K Hicks, S Hobliet, M Khandaker, et al.. Pion production and Compton scattering at LEGS. *Proceedings NSTAR'2000*, Vol Feb 16-17, (2000).
- C Whisnant, K Ardashev, V Bellini, M Blecher, C Cacace, A Caracappa, A Cichocki, C Commeaux, I Danchev, et al.. The first pion photoproduction results from polarized HD at LEGS. *Int'l Symposium on Electromagnetic Interactions in Nuclear and Hadron Physics*, Vol Dec 2001, p. N/A, sponsored by N/A. (2001).
- S Whisnant, K Ardashev, O Bartalini, M Blecher, A Caracappa, A D'Angelo, J Dideliz, R Deininger, K Hicks, et al.. The polarized HD ice target at LEGS. *The symposium on the Gerasimov-Drell-Hearn sum rule and the spin structure in the resonance region*, Vol June 2000, (2000).

#### Beamline X6A

- S Knight, D Choudhury, S Hultgren, J Pinkner, V Stojanoff, A Thompson. Structure of S Pilus Periplasmic Chaperone SfaE at 2.2 Å Resolution. *Acta Cryst. D*. **58**, 1016-1022 (2002).

#### Beamline X7A

- B Bursten, M Chisholm, R Clark, S Firth, C Hadad, A MacIntosh, P Wilson, P Woodward, J Zaleski. Oxalate-Bridged Complexes of Dimolybdenum and Ditungsten Supported by Pivalate Ligands: (tBuCO<sub>2</sub>)<sub>3</sub>M<sub>2</sub>(μ-O<sub>2</sub>CCO<sub>2</sub>)M<sub>2</sub>(O<sub>2</sub>CtBu)<sub>3</sub>. Correlation of the Solid-State, Molecular, and Electronic Spectral Data. *J. Am. Chem. Soc.* **124** (12), 3050-3063 (2002).

- N Hyatt, J Hriljac, Y Miyazaki, A Jephcoat, I Gameson, P Edwards. A Study of Structure-Compressibility Relationships in Layered Cuprate Materials. *Phys. Rev. B.* **65**, 014507 (2002).
- B Kennedy, T Vogt, C Martin, J Parise, J Hriljac. Pressure-Induced Phase Transition in PrAlO<sub>3</sub>. *Chem. Mater.* **14**, 2644-2648 (2002).
- D La-Orauttapong, B Noheda, Z Ye, P Gehring, J Toulouse, D Cox, G Shirane. New phase diagram of relaxor ferroelectric (1-x)PbZn<sub>1/3</sub>Nb<sub>2/3</sub>O<sub>3</sub>-xPbTiO<sub>3</sub>. *Phys. Rev. ST AB.* **65**, 144101 (2002).
- Y Lee, T Vogt, J Hriljac, J Parise, G Artioli. Pressure-Induced Volume Expansion of Zeolites in the Natrolite Family. *J. Am. Chem. Soc.* **124** (19), 5466-5475 (2002).
- Y Lee, T Vogt, J Hriljac, J Parise. Discovery of a Rhombohedral Form of the Li-Exchanged Aluminogermanate Zeolite RHO and its Pressure-Temperature-, and Composition-Induced Phase Transitions. *Chem. Mater.* **14**, 3501-3508 (2002).
- Y Lee, T Vogt, J Hriljac, J Parise, G Artioli. First Structural Investigation of a Super-hydrated Zeolite. *J. Am. Chem. Soc.* **123**, 12732-12733 (2001).
- Y Lee, J Hriljac, T Vogt, J Parise, M Edmondson, P Anderson, D Corbin, T Nagai. Phase Transition of Zeolite Rho at High-Pressure. *J. Am. Chem. Soc.* **123**, 8418-8419 (2001).
- A Moodenbaugh, M Suenaga, L Lewis, D Cox, M Rupich, G Riley, Q Li, R Parrella. Superconducting Critical Current Densities and Synchrotron X-ray Diffraction Measurements of (Bi,Pb)<sub>2</sub>Sr<sub>2</sub>Ca<sub>2</sub>Cu<sub>3</sub>O<sub>y</sub>/Ag Composites. *Physica C.* **377** (1-2), 67-74 (2002).
- V Petkov, P Trikalitis, E Bozin, S Billinge, T Vogt, M Kanatzidis. Structure of V<sub>2</sub>O<sub>5</sub>-nH<sub>2</sub>O Xerogel Solved by the Atomic Pair Distribution Function Technique. *J. Am. Chem. Soc.* **124**, 10157-10162 (2002).
- G Wu, M Deem, S Elomari, R Medrud, T Maesen, C Kibby, C Chen, I Chan. Synthesis and Structure Determination by ZEPHOS of SSZ-55: A New High-Silica, Large-Pore Zeolite. *J. Phys. Chem. B.* **106** (2), 264-270 (2002).
- Y Zhao, F Chu, R Von Dreele, Q Zhu. Structural Phase Transitions and Crystal Chemistry of HfV<sub>2</sub> at Low Temperatures. *Acta Cryst. B.* **56**, 601-6 (2000).
- Beamline X7B**
- K Barkigia, P Battioni, V Riou, D Mansuy, J Fajer. Supramolecular self-assembly of a fluorinated Zn porphyrin. Molecular structure of a two-dimensional network of amine-functionalized hexacoordinated Zn porphyrins. *Chem. Commun.* (9), 956-957 (2002).
- K Barkigia, M Palacio, Y Sun, M Noguez, M Renner, F Varret, P Battioni, D Mansuy, I Fajer. Air-stable, electron-deficient Fe(II) catalytic porphyrins. characterization and molecular structures of rare high spin Fe(II)hexacoordinated porphyrins. *Inorg. Chem.* **41**, 5647-5649 (2002).
- T Cheng, D Szalda, R Bullock. An Uncommon Bonding Mode of a Familiar Ligand: A Molybdenum Complex with a Four-Electron Donor Chelating N<sup>3</sup>-PPH<sub>3</sub> Ligand and Its Structural Determination using Synchrotron Radiation. *Chem. Commun.* **1999**, 1629-1630 (1999).
- M Cirraolo, J Hanson, B Toby, C Grey. combined X-ray and Neutron Powder Refinement and NMR Study of Hydrochlorofluorocarbon HCFC-124a Binding on NaX. *J. Phys. Chem. B.* **105**, 12330-12337 (2001).
- M Cirraolo, J Hanson, C Grey. Solid-state rubidium exchange of zeolite NH<sub>4</sub>Y. *Microporous Mesoporous Mater.* **49**, 111-124 (2001).
- M Cirraolo, P Norby, J Hanson, D Corbin, C Grey. Structural characterization and Hydrochlorofluorocarbon Reactivity on Zin-Exchanged NaX. *J. Phys. Chem. B.* **103**, 346-356 (1999).
- G Gainsford, N Robinson, J Tallon. (NH<sub>4</sub>)<sub>2</sub>(NH<sub>3</sub>(CH<sub>2</sub>)<sub>6</sub>NH<sub>3</sub>)<sub>4</sub>[H<sub>2</sub>W<sub>12</sub>O<sub>42</sub>].8H<sub>2</sub>O: a novel ammonium 1,6-hexanediammonium dodecatungstate. *Acta Cryst. E.* **58** (10), m521-m523 (2002).
- A Gualtieri. Synthesis of sodium zeolites from a natural halloysite. *Phys. Chem. Miner.* **28**, 719-728 (2001).
- A Gualtieri. Study of NH<sub>4</sub><sup>+</sup> in the zeolite phillipsite by combined synchrotron powder diffraction and IR spectroscopy. *Acta Cryst. B.* **56**, 584-593 (2000).
- T Jensen, R Hazell, A Christensen, J Hanson. Hydrothermal Synthesis of Lithium Zinc Phosphates: Structural Investigation of Twinned alpha-Li<sub>4</sub>Zn(PO<sub>4</sub>)<sub>2</sub> and a High Temperature Polymorph beta-Li<sub>4</sub>(PO<sub>4</sub>)<sub>2</sub>. *J. Solid State Chem.* **166**, 341-351 (2002).
- A Kremenovic, P Norby, R Dimitrijevic, V Dondur. High-temperature Synchrotron Powder Diffraction Investigation of the thermal Expansion, Strain and microstructure for the co-elastic alpha to beta Hexacelsian Transition. *Phase Transit.* **68**, 587-605 (1999).
- H Liu. Structural and Functional Characterization of Inorganic Materials by Solid State NMR and Diffraction Techniques. PhD Thesis. State University of New York, Stony Brook. (2001).
- J Post, P Heaney, J Hanson. Neutron and temperature-resolved synchrotron X-ray powder diffraction study of akaganéite. *Eighteenth International Mineralogical Association Meeting*, Vol 18, p. 88, sponsored by International Mineralogical Association. (2002).
- J Post, P Heaney, J Hanson. Real-time synchrotron X-ray powder diffraction studies of the structure and dehydration of todorokite. *American Geophysical Union Spring Meeting*, Vol 83, p. M22A-13, sponsored by American Geophysical Union. (2002).
- J Post, P Heaney, J Hanson. Rietveld refinement of a triclinic structure for synthetic Na-birnessite using synchrotron powder diffraction data. *Powder Diffraction.* **17**, 218-221 (2002).
- B Reisner, Y Lee, J Hanson, G Jones, J Parise, D Corbin, B Toby, A Freitag, J Lares, V Kahlenberg. Understanding negative thermal expansion and "trap door" cation relocations in zeolite RHO. *Chem. Commun.* **22**, 2221-2222 (2000).
- J Rodriguez, J Hanson, A Frenkel, J Kim, M Perez. Experimental and Theoretical Studies on the Reaction of H<sub>2</sub> with NiO: Role of O Vacancies and Mechanism for Oxide Reduction. *J. Am. Chem. Soc.* **124** (2), 346-354 (2002).
- A Sani, G Cruciani, A Gualtieri. Dehydration dynamics of Ba-phillipsite: an in situ synchrotron powder diffraction study. *Phys. Chem. Miner.* **29**, 351-361 (2002).



- K Taasti, A Christensen, P Norby, J Hanson, B Lebeck, H Jakobsen, J Skibsted. Hydrothermal Synthesis, Single-Crystal Structure Analysis and Solid-State NMR Characterization of  $Zn_2(OH)_0.14(3)F_{0.86}(3)(PO_4)_2$ . *J. Solid State Chem.* **164**, 43-50 (2002).
- W Tong, G Xia, Z Tian, J Liu, J Cai, S Suib, J Hanson. Hydrothermal Synthesis and Characterization of Sodium Manganese Oxo-Phosphate  $Na_2Mn_2P(PO_4)_2 \cdot H_2O$ . *Chem. Mater.* **14** (2), 615-620 (2002).
- Beamline X8C**
- M Alekshun, S Levy, T Mealy, B Seaton, J Head. The crystal structure of MarR, a regulator of multiple antibiotic resistance, at 2.3Å resolution. *Nat. Struct. Biol.* **8**, 710-714 (2001).
- R Batra, R Khayat, L Tong. Molecular mechanism for dimerization to regulate the catalytic activity of human cytomegalovirus protease. *Nat. Struct. Biol.* **8**, 810-817 (2001).
- D Buckler, Y Zhou, A Stock. Evidence of intradomain and interdomain flexibility in an OmpR/PhoB homolog from *Thermotoga maritima*. *Structure*. **10** (2), 153-164 (2002).
- D Desveaux, J Allard, N Brisson, J Sygusch. A New Family of Plant Transcription Factors Displays a Novel ssDNA-binding Surface. *Nat. Struct. Biol.* **9** (7), 512-517 (2002).
- P Dunten, C Belunis, R Crowther, K Hollfelder, U Kammlott, W Levin, H Michel, G Ramsey, A Swain, et al.. Crystal structure of human cytosolic phosphoenolpyruvate carboxykinase reveals a new GTP-binding site. *J. Mol. Biol.* **316**, 257-264 (2002).
- S Faham, J Bowie. Bicelle Crystallization: A new method for crystallizing membrane proteins yields a monomeric bacteriorhodopsin structure. *J. Mol. Biol.* **316**, 1-6 (2002).
- D Fong, A Berghuis. Substrate Promiscuity of an Aminoglycoside Antibiotic Resistance Enzyme via Target Mimicry. *EMBO J.* **21** (10), 2323-2331 (2002).
- P Hart, S Deep, A Taylor, Z Shu, C Hinck, A Hinck. Crystal Structure of the Human TBR2 ectodomain-TGF- $\beta$ 3 Complex. *Nat. Struct. Biol.* **9** (3), 203-208 (2002).
- J Head, N Swamy, R Ray. Crystal Structure of the Complex Between Actin and Human Vitamin D-Binding Protein at 2.5 Å Resolution. *Biochemistry*. **41**, 9015-9020 (2002).
- H Jayaram, Z Taraporewala, J Patton, B Prasad. Rotavirus protein involved in genome replication and packaging exhibits a HIT-like fold. *Nature*. **417**, 311-315 (2002).
- C Kim, M Gingery, R Pilpa, J Bowie. The SAM Domain of Polyhomeotic Forms a Helical Polymer. *Nat. Struct. Biol.* **9** (6), 453-457 (2002).
- B Kwak, Y Zhang, M Yun, R Heath, C Rock, S Jackowski, H Park. Structure and Mechanism of CTP:Phosphocholine Cytidyltransferase (LicC) from *Streptococcus pneumoniae*. *J. Biol. Chem.* **277**, 4343-4350 (2002).
- C Lemke, P L. Howell. The 1.6Å structure of *E. coli* argininosuccinate synthetase suggests a conformational change during catalysis. *Structure*. **9**, 1153-1164 (2001).
- D Lim, N Strynadka. Structural Basis for the  $\beta$ -lactam Resistance of PBP2a from Methicillin-resistant *Staphylococcus aureus*. *Nat. Struct. Biol.* **9** (11), 870 (2002).
- A Maris, M Sawaya, M Kaczor-Grzeskowiak, M Jarvis, S Bearson, M Kopka, I Schroder, R Gunsalus, R Dickerson. Dimerization Allows DNA Target Site Recognition by the NarL Response Regulator. *Nat. Struct. Biol.* **9** (10), 771-778 (2002).
- C Regni, P Tipton, L Beamer. Crystal Structure of PMM/PMG: An Enzyme in the Biosynthetic Pathway of *P. aeruginosa* Virulence Factors. *Structure Fold. Des.* **10**, 269-279 (2002).
- L Sampaleanu, B Yu, P L. Howell. Mutational Analysis of duck delta2 crysallin and the structure of an inactive mutant with bound substrate provide insight into the enzymatic mechanism of argininosuccinate lyase. *J. Biol. Chem.* **277** (7), 4166-4175 (2002).
- J Sivaraman, V Sauve, R Larocque, E Stura, J Schrag, M Cygler, A Matte. Structure of the 16S rRNA Pseudouridine Synthase RsuA Bound to Uracil and UMP. *Nat. Struct. Biol.* **9**, 353-358 (2002).
- S Soelaiman, K Jakes, N Wu, C Li, M Shoham. Crystal Structure of Colicin E3: Implications for Cell Entry and Ribosome Inactivation. *Mol. Cell*. **8**, 1053-1062 (2001).
- M Sundaramoorthy, M Meiyappan, P Todd, B Hudson. Crystal Structure of NC1 Domains; Structural Basis for Type IV Collagen Assembly in Basement Membranes. *J. Biol. Chem.* **277** (34), 31142-33153 (2002).
- W Vetter, D Gallagher, M Dudley. Synchrotron White-beam X-ray Topography of Ribonuclease S Crystals. *Acta Cryst. D*. **D58**, 579-584 (2002).
- S Wang, C Mura, M Sawaya, D Cascio, D Eisenberg. Structure of a Nudix protein from *Pyrobaculum aerophilum* reveals a dimer with two intersubunit  $\beta$  sheets. *Acta Cryst. D*. **58**, 571-578 (2002).
- Z Yang, H Zhang, H Hung, C Kuo, L Tsai, H Yuan, W Chou, G Chang, L Tong. Structural studies of the pigeon cytosolic NADP-dependent malic enzyme. *Protein Sci.* **11**, 332-341 (2002).
- L Zhang, J Doudna. Structural insights into group II intron catalysis and branch-site selection. *Science*. **295**, 2084-8 (2002).
- Beamline X9A**
- W Barton, J Biggins, J Jiang, J Thorson, D Nikolov. Expanding Pyrimidine Diphosphosugar Libraries via Structure-based Nucleotidyltransferase Engineering. *Proc Natl Acad Sci USA*. **99** (21), 13397-13402 (2002).
- W Barton, J Lesniak, J Biggins, P Jeffrey, J Jiang, K Rajashankar, J Thorson, D Nikolov. Structure, Mechanism and Engineering of a Nucleotidyltransferase as a First Step Toward Glycerandomization. *Nat. Struct. Biol.* **8**, 545-551 (2001).

- J Bonanno, C Edo, N Eswar, U Pieper, M Romanowski, V Ilyin, S Gerchman, H Kycia, W Studier, et al.. Structural Genomics of Enzymes Involved in Sterol/Isoprenoid Biosynthesis. *Proc Natl Acad Sci USA*. **98**, 12896-12901 (2001).
- M Bubb, L Govindasamy, E Yarmola, S Vorobiev, S Almo, T Somasundaram, M Chapman, M Agbandje-McKenna, R McKenna. Polylysine Induces an Antiparallel Actin Dimer that Nucleates Filament Assembly: Crystal Structure at 3.5-Å Resolution. *J. Biol. Chem.* **277**, 20999-21006 (2002).
- S Burley, K Kamada. Transcription Factor Complexes. *Curr. Opin. Struct. Biol.* **12**, 225-230 (2002).
- E Campbell, O Muzzin, M Chlenov, J Sun, C Olson, O Weinman, M Trester-Zedlitz, S Darst. Structure of the Bacterial RNA Polymerase Promoter Specificity Sigma Subunit. *Mol. Cell*. **9**, 527-539 (2002).
- M Chance, A Bresnick, S Burley, J Jiang, C Lima, A Sali, S Almo, J Bonanno, J Buglino, et al.. Structural Genomics: A Pipeline for Providing Structures for the Biologist. *Protein Sci.* **11**, 723-738 (2002).
- J Coyle, S Qamar, K Rajashankar, D Nikolov. Structure of GABARAP in Two Conformations: Implications for GABA(A) Receptor Localization and Tubulin Binding. *Neuron*. **33**, 63-74 (2002).
- R Deo, C Groft, K Rajashankar, S Burley. Recognition of the Rotavirus mRNA 3' Consensus by an Asymmetric NSP3 Homodimer. *Cell*. **108**, 71-81 (2002).
- M Finnin, J Donigian, N Pavletich. Structure of the Histone Deacetylase SIRT2. *Nat. Struct. Biol.* **20018**, 621-625 (2001).
- G Gainsford. Crystals Great And Small. *Chem. In New Zealand*. **66** (2), 29-32 (2002).
- J Himanen, D Nikolov. Purification, Crystallization and Preliminary Characterization of the EphB2-ephrinB2 Complex. *Acta Cryst. D*. **D58**, 533-535 (2002).
- J Himanen, K Rajashankar, M Lackmann, C Cowan, M Henkemeyer, D Nikolov. Crystal Structure of an Eph Receptor-ephrin Complex. *Nature*. **414**, 933-938 (2001).
- J Keift, K Zhou, A Grech, R Jubin, J Doudna. Crystal Structure of an RNA Tertiary Domain Essential to HCV IRES-Mediated Translation Initiation. *Nat. Struct. Biol.* **9**, 370-374 (2002).
- C Kielkopf, S Burley. X-ray Structures of Threonine Aldolase Complexes: Structural Basis of Substrate Recognition. *Biochemistry*. **41**, 11711-11720 (2002).
- D Klein, T Schmeing, P Moore, T Steitz. The Kink-Turn: A New RNA Secondary Structure Motif. *EMBO J.* **20**, 4214-4221 (2001).
- D Ostrov, M Roden, W Shi, E Palmieri, G Christianson, L Mendoza, G Villafior, D Tilley, N Shastri, et al.. How H13 Histocompatibility Peptides Differing by a Single Methyl Group and Lacking Conventional MHC Binding Anchor Motifs Determine Self-Nonself Discrimination. *J. Immunol.* **1**, 283-289 (2002).
- S Roderick, W Chan, D Agate, L Olsen, M Vetting, K Rajashankar, D Cohen. Structure of human phosphatidylcholine transfer protein in complex with its ligand. *Nat. Struct. Biol.* **9**, 507-511 (2002).
- A Roll-Mecak, B Shin, T Dever, S Burley. Engaging the Ribosome: Universal IFs of Translation. *Trends Biochem. Sci.* **26**, 705-709 (2001).
- M Romanowski, R Soccio, J Breslow, S Burley. Crystal Structure of the Mus Musculus Cholesterol-regulated START Protein 4 (StarD4) Containing a StAR-related Lipid Transfer Domain. *Proc Natl Acad Sci USA*. **99** (10), 6949-6954 (2002).
- M Romanowski, S Burley. Crystal Structure of the Escherichia Coli Shikimate Kinase I (AroK) that Confers Sensitivity to Mecillinam. *Proteins: Struct. Func. Genet.* **47** (4), 558-562 (2002).
- M Romanowski, S Gibney, S Burley. Crystal Structure of the Escherichia coli SbmC Protein That Protects Cells From the DNA Replication Inhibitor Microcin B17. *Proteins: Struct. Func. Genet.* **47**, 403-407 (2002).
- M Romanowski, J Bonanno, S Burley. Crystal Structure of the Escherichia coli Glucose-Inhibited Division ProteinB(GidB) Reveals a Methyltransferase Fold. *Proteins: Struct. Func. Genet.* **47**, 563-567 (2002).
- M Romanowski, J Bonanno, S Burley. Crystal Structure of the Streptococcus Pneumoniae Phosphomevalonate Kinase, a Member of the GHMP Kinase Superfamily. *Proteins: Struct. Func. Genet.* **47** (4), 568-571 (2002).
- J Schwartz, X Zhang, S Nathenson, S Almo. Structural Mechanisms of Co-Stimulation. *Nat. Immunol.* **5**, 427-434 (2002).
- W Shi, K Tanaka, T Crother, M Taylor, S Almo, V Schramm. Structural Analysis of Adenine Phosphoribosyltransferase from Saccharomyces Cerevisiae. *Biochemistry*. **36**, 10800-10809 (2001).
- E Stavridi, Y Huyen, I Loreto, D Scolnick, T Halazonetis, N Pavletich, P Jeffrey. Crystal Structure of the FHA Domain of the Chfr Mitotic Checkpoint Protein and Its Complex with Tungstate. *Structure*. **10** (7), 891-9 (2002).
- Y Tseng, E Fedorov, J McCaffery, S Almo, D Wirtz. Micromechanics and Ultrastructure of Actin Filament Networks Crosslinked by Human Fascin: A Comparison with Alpha-Actinin. *J. Mol. Biol.* **2**, 351-366 (2001).
- L Wang, C Lima, S Shuman. Structure and Mechanism of T4 Polynucleotide Kinase: an RNA Repair Enzyme. *EMBO J.* **21** (14), 3873-3880 (2002).
- H Yang, P Jeffrey, J Miller, E Kinnucan, Y Sun, N Thoma, N Zheng, P Chen, N Zheng, et al. BRCA2 Function in DNA Binding and Recombination from a BRCA2-DSS1-ssDNA Structure. *Science*. **297**, 1837-1848 (2002).
- X Zhang, J Schwartz, S Nathenson, S Almo. Crystallization and Preliminary X-Ray Analysis of the Complex Between Human CTLA-4 and B7-2. *Acta Cryst. D*. **57**, 898-899 (2001).

### Beamline X9B

- K Aghaiypour, A Wlodawer, J Lubkowski. Structural Basis for the Activity and Substrate Specificity of Erwinia Chrysanthemii L-Asparaginase. *Biochemistry*. **40**, 5655-5664 (2001).
- B Ahvazi, H Kim, S Kee, Z Nemes, P Steinert. Three-dimensional Structure of the Human Transglutaminase 3 Enzyme: Binding of Calcium Ions Changes Structure for Activation. *EMBO J.* **21**, 2055-2067 (2002).

- B Ahvazi, H Kim, S Kee, Z Nemes, P Steinert. Related Articles Three-Dimensional Structure of the Human Transglutaminase 3 Enzyme: Binding of Calcium Ions Changes Structure for Activation . *EMBO J.* **21**, 2055-2067 (2002).
- F Al-Mjeni, T Ju, T Pochapsky, M Maroney. XAS Investigation of the Structure and Function of Ni in Acireductone Dioxygenase. *Biochemistry*. **41**, 6761-6769 (2002).
- S Banumathi, K Rajashankar, C Notzel, B Aleksiev, T Singh, N Genov, C Betzel. Structure of the Neurotoxic Complex Vipoxin at 1.4 Å Resolution. *Acta Cryst. D*. **57**, 1552-1559 (2001).
- L Barrientos, J Louis, I Botos, T Mori, Z Han, B O'Keefe, M Boyd, A Wlodawer, A Gronenborn. The Domain-Swapped Dimer of Cyanovirin-N is in a Metastable Folded State. Reconciliation of X-Ray and NMR Structures . *Structure*. **10**, 673-686 (2002).
- J Blaszczyk, J Tropea, M Bubunencko, K Routzahn, D Waugh, D Court, X Ji. Crystallographic and Modeling Studies of RNase III Suggest a Mechanism for Double-Stranded RNA Cleavage. *Structure*. **9**, 1225-1236 (2001).
- J Blaszczyk, Y Li, H Yan, X Ji. Crystal Structure of Unligated Guanylate Kinase from Yeast Reveals GMP-Induced Conformational Changes. *J. Mol. Biol.* **307**, 247-257 (2001).
- I Botos, Z Wu, W Lu, A Wlodawer. Crystal Structure of a Cyclic Form of Bovine Pancreatic Trypsin Inhibitor. *FEBS Lett.* **509**, 90-94 (2001).
- I Botos, B O'Keefe, S Shenoy, L Cartner, D Ratner, P Seeberger, M Boyd, A Wlodawer. Structures of the Complexes of a Potent Anti-HIV Protein Cyanovirin-N and High Mannose Oligosaccharides. *J. Biol. Chem.* **277** (37), 34336-34342 (2002).
- J Boyington, P Sun. A Structural Perspective on MHC Class I Recognition by Killer Cell Immunoglobulin-Like Receptors . *Mol. Immunol.* **38**, 1007-1021 (2002).
- J Boyington, A Brooks, P Sun. Structure of Killer Cell Immunoglobulin-Like Receptors and their Recognition of the Class I MHC Molecules. *Immunol Rev.* **181**, 66-78 (2001).
- M Bucher, A Evdokimov, D Waugh. Differential Effects of Short Affinity Tags on the Crystallization of *Pyrococcus Furiosus* Maltodextrin-Binding Protein . *Acta Cryst. D*. **58**, 392-397 (2002).
- C Chang, D Newton, S Rybak, A Wlodawer. Crystallographic and Functional Studies of a Modified Form of Eosinophil-Derived Neurotoxin (EDN) with Novel Biological Activities. *J. Mol. Biol.* **317**, 119-130 (2002).
- R Chu, J Takei, J Knowlton, M Andrykovitch, W Pei, A Kajava, P Steinbach, X Ji, Y Bai. Redesign of a Four-helix Bundle Protein by Phage Display Coupled with Proteolysis and Structural Characterization by NMR and X-ray Crystallography. *J. Mol. Biol.* **323** (2), 253-262 (2002).
- M Costas, J Rohde, A Stubna, Y Raymond, N Ho, L Quaroni, E Munck, L Que. A Synthetic Model for the Putative Fe IV 2O<sub>2</sub> Diamond Core of Methane Monooxygenase Intermediate Q. *J. Am. Chem. Soc.* **123**, 12931-12932 (2001).
- Z Dauter, D Adamiak. Anomalous Signal of Phosphorus used for Phasing DNA Oligomer: Importance of Data Redundancy. *Acta Cryst. D*. **57**, 990-995 (2001).
- Z Dauter, M Dauter, E Dodson. Jolly SAD. *Acta Cryst. D*. **D58**, 494-506 (2002).
- U Derewenda, J Li, Z Derewenda, Z Dauter, G Mueller, G Rule, D Benjamin. The Crystal Structure of a Major Dust Mite Allergen Der p 2 and its Biological Implications. *J. Mol. Biol.* **318**, 189-197 (2002).
- M DiDonato, J Zhang, L Que, Jr., B Sarkar. Zinc Binding to the N-Terminal Domain of the Wilson Disease Copper-Transporting ATPase: Implications for in vivo Metal Ion Mediated Regulation of ATPase Activity. *J. Biol. Chem.* **277**, 13409 (2002).
- B Dunn, M Goodenow, A Gustchina, A Wlodawer. Retroviral Proteases. *Genome Bio.* **3**, 3006 (2002).
- A Evdokimov, D Anderson, K Routzahn, D Waugh. Unusual Molecular Architecture of the *Yersinia Pestis* Cytotoxin YopM: A Leucine-Rich Repeat Protein with the Shortest Repeating Unit. *J. Mol. Biol.* **312**, 807-821 (2001).
- A Evdokimov, J Tropea, K Routzahn, D Waugh. Three-Dimensional Structure of the Type III Secretion Chaperone SycE from *Yersinia Pestis*. *Acta Cryst. D*. **58**, 398-406 (2002).
- M Frank, F Dyda, A Dobrodumov, A Gronenborn. Core Mutations Switch Monomeric Protein GB1 into an Intertwined Tetramer. *Nat. Struct. Biol.* **9** (11), 877 (2002).
- G Gainsford. Crystals Great And Small. *Chem. In New Zealand*. **66** (2), 29-32 (2002).
- X Gao, X Wen, C Yu, L Esser, S Tsao, B Quinn, L Zhang, L Yu, D Xia. The Crystal Structure of Mitochondrial Cytochrome bc<sub>1</sub> in Complex with Fomoxadone: The Role of Aromatic-Aromatic Interaction in Inhibition. *Biochemistry*. **41**, 11692-11702 (2002).
- S Garman, L Hannick, A Zhu, D Garboczi. The 1.9 Angstrom Structure of alpha-N-Acetylgalactosaminidase: Molecular Basis of Glycosidase Deficiency Diseases. *Structure*. **10**, 425-434 (2002).
- Y Gu, L Reshetnikova, Y Li, S Singh, X Ji. Crystal Structure of Shikimate Kinase from *Mycobacterium tuberculosis* Reveals the Dynamic Role of LID Domain in Catalysis. *J. Mol. Biol.* **319**, 779-789 (2002).
- J Gu, S Xu, L Yu. A Model of Cross-Bridge Attachment to Actin in the A.M.ATP State Based on X-Ray diffraction from Permeabilized Rabbit Psoas muscle. *Biophys. J.* **82**, 2123-2133 (2002).
- A Guarne, Q Zhao, R Ghirlando, W Yang. Insights into Negative Modulation of *E. Coli* Replication Initiation from the Structure of SeqA-hemimethylated DNA Complex. *Nat. Struct. Biol.* **9** (11), 839 (2002).
- K Gunter, L Miller, M Aschner, R Eliseev, D Depuis, C Gavin, T Gunter. XANES Spectroscopy: A Promising Tool for Toxicology: A Tutorial. *Neurotoxicology*. **23**, 127 - 146 (2002).
- T Hall. Poly(A) Tail Synthesis and Regulation: Recent Structural Insights. *Curr. Opin. Struct. Biol.* **1**, 82-88 (2002).
- A Henn, J Halfon, I Kela, I Orion, I Sagi. Nucleic Acid Fragmentation in Milliseconds Time scale Using a Conventional X-ray Rotating Anode Source. *Nucleic Acids Res.* **29** (24), e122: 1-10 (2001).

- A Hofmann, M Grella, I Botos, W Filipowicz, A Wlodawer. Crystal Structures of the Semi-Reduced and Inhibitor-Bound Forms of Cyclic Nucleotide Phosphodiesterase from *Arabidopsis thaliana*. *J. Biol. Chem.* **277**, 1419-1425 (2002).
- D Hoover, C Boulegue, D Yang, J Oppenheim, K Tucker, W Lu, J Lubkowski. The Structure of Human Macrophage Inflammatory Protein-3  $\alpha$ /CCL20 Linking Antimicrobial and CC Chemokine Receptor-6-Binding Activities with Human  $\beta$ -Defensins. *J. Biol. Chem.* **277** (40), 37647-37654 (2002).
- J Hurley, T Meyer. Subcellular Targeting by Membrane Lipids. *Curr. Opin. Cell Biol.* **13**, 146-152 (2001).
- J Hurley, D Anderson, B Beach, B Canagarajah, Y Ho, E Jones, G Miller, S Misra, M Pearson, et al. Structural Genomics and Signaling Domains. *Trends Biochem. Sci.* **27**, 48-53 (2002).
- M Jaskolski, M Kozak, J Lubkowski, G Palm, A Wlodawer. Structures of Two Highly Homologous Bacterial L-Asparaginases: A Case of Enantiomorphic Space Groups. *Acta Cryst. D.* **57**, 369-377 (2001).
- X Ji, J Blaszczyk, X Chen. The Absorption Edge of Protein-Bound Mercury and a Double-Edge Strategy for HgMAD Data Acquisition. *Acta Cryst. D.* **D57**, 1003-1007 (2001).
- B Kang, D Cooper, Y Devedjiev, U Derewenda, Z Derewenda. The Structure of the FERM Domain of Merlin, the Neurofibromatosis Type 2 Gene Product. *Acta Cryst. D.* **D58** (3), 381-391 (2002).
- S Kim, T Jeitner, P Steinert. Transglutaminases in Disease. *Neurochem. Int.* **40**, 85-103 (2002).
- H Kim, Z Nemes, W Idler, C Hyde, P Steinert, B Ahvazi. Crystallization and Preliminary X-Ray Analysis of Human Transglutaminase 3 from Zymogen to Active Form. *J. Struct. Biol.* **135**, 73-77 (2001).
- S Misra, G Miller, J Hurley. Recognizing Phosphatidylinositol 3-Phosphate. *Cell.* **107**, 559-562 (2001).
- S Misra, R Puertollano, Y Kato, J Bonifacino, J Hurley. Structural Basis for Acidic Cluster-Dileucine Signal Recognition by VHS Domains. *Nature.* **415**, 933-937 (2002).
- R Nagem, Z Dauter, I Polikarpov. Protein Crystal Structure Solution by Fast Incorporation of Negatively and Positively Charged Anomalous Scatterers. *Acta Cryst. D.* **57**, 996-1002 (2001).
- V Oganessian, N Oganessian, S Terzyan, D Qu, Z Dauter, N Esmon, C Esmon. The Crystal Structure of the Endothelial Protein C Receptor and a Bound Phospholipid. *J. Biol. Chem.* **277** (28), 24851-24854 (2002).
- I Orion, F Dilmanian, Z Zhong, A Rosenfeld, I Sagi, A Henn, L Peña. X-Ray Synchrotron Beams for Medical Applications: Monte Carlo Simulations and Experiments Results. *MC2000 - Monte Carlo Conference, 23-26 October 2000, Lisbon, Portugal*, Vol 1, p. 93-98, sponsored by L. Tavora. (2000).
- A Padyana, V Bhat, K Madyastha, K Rajashankar, S Ramakumar. Crystal Structure of a Light-Harvesting Protein C-Phycocyanin from *Spirulina Platensis*. *Biochem. Biophys. Res. Commun.* **282**, 893-898 (2001).
- M Perbandt, V Chandra, K Rajashankar, K Idakieva, K Parvanova, W Rypniewski, S Stoeva, W Voelter, N Genov, C Betzel. Preliminary X-Ray Diffraction Studies of the External Functional Unit Rth2-e from the *Rapana thomasiana*. *Acta Cryst. D.* **57**, 1663-1665 (2001).
- L Quaroni, B Brazeau, A Rocklin, V Popescu, J Lipscomb, L Que, Jr.. EXAFS studies of mononuclear and dinuclear non-heme iron enzymes. *J. Inorg. Biochem.* **86**, 387 (2001).
- S Radaev, S Motyka, W Fridman, C Sautes-Fridman, P Sun. The Structure of a Human Type III Fc-Gamma Receptor in Complex with Fc. *J. Biol. Chem.* **276**, 16469-16477 (2001).
- S Radaev, B Rostro, A Brooks, M Colonna, P Sun. Conformational Plasticity Revealed by the Cocrystal Structure of NKG2D and its Class I MHC-Like Ligand ULBP3. *Immunity.* **15**, 1039-1049 (2001).
- S Radaev, P Sun. Recognition of IgG by Fc-gamma Receptor. The Role of Fc Glycosylation and the Binding of Peptide Inhibitors. *J. Biol. Chem.* **276**, 16478-16483 (2001).
- B Ramakrishnan, P Qasba. Crystal Structure of Lactose Synthase Reveals a Large Conformational Change in its Catalytic Component, the  $\beta$ -1,4-Galactosyltransferase-I. *J. Mol. Biol.* **310**, 205-218 (2001).
- B Ramakrishnan, P Qasba. Structure-based Design of  $\beta$ -1,4-galactosyltransferase I (b4Gal-T1) with Equally Efficient N-acetylgalactosaminyltransferase Activity: Point mutation broadens b4Gal-T1 donor specificity. *J. Biol. Chem.* **277** (23), 20833-20833 (2002).
- B Ramakrishnan, P Balaji, P Qasba. Crystal Structure of  $\beta$ -1,4-galactosyltransferase Complex with UDP-Gal Reveals an Oligosaccharide Acceptor Binding Site. *J. Mol. Biol.* **318**, 491-502 (2002).
- B Ramakrishnan, P Shah, P Qasba.  $\alpha$ -Lactalbumin (LA) Stimulates Milk  $\beta$ -1,4-Galactosyl-transferase I ( $\beta$ Gal-T1) to Transfer Glucose from UDP-Glucose to N-acetylglucosamine. *J. Biol. Chem.* **276**, 37665-37671 (2001).
- B Ramakrishnan, E Boeggeman, P Qasba.  $\beta$ -1,4-Galactosyltransferase and Lactose Synthase: Molecular Mechanical Devices. *Biochem. Biophys. Res. Commun.* **291**, 1113-1118 (2002).
- J Rohde, M Costas, M Lim, W Nam, L Que, Jr.. EXAFS Studies of Biomimetic Intermediates Related to Active Species in Nonheme and Heme Iron Enzymes. *8th International Symposium Activation of Dioxygen and Homogeneous Catalytic Oxidation, Atlanta, GA, U.S.A, 2002*, p. 74, (2002).
- M Romanowski, J Bonanno, S Burley. Crystal Structure of the Streptococcus Pneumoniae Phosphomevalonate Kinase, a Member of the GHMP Kinase Superfamily. *Proteins: Struct. Func. Genet.* **47** (4), 568-571 (2002).
- J Shearer, H Jackson, D Schweitzer, D Rittenberg, T Leavy, W Kaminsky, R Scarrow, J Kovacs. The First Example of a Nitrile Hydratase Model Complex that Reversibly Binds Nitriles. *J. Am. Chem. Soc.* **124** (38), 11417-11428 (2002).

- W Shi, A Sarver, C Wang, K Tanaka, S Almo, V Schramm. Closed Site Complexes of Adenine Phosphoribosyltransferase from *Giardia Lamblia* Reveal a Mechanism of Ribosyl Migration. *J. Biol. Chem.* **277** (42), 39981 (2002).
- W Shi, L Basso, D Santos, P Tyler, R Furneaux, J Blanchard, S Almo, V Schramm. Structures of Purine Nucleoside Phosphorylase from *Mycobacterium Tuberculosis* in Complexes with Immucillin-H and its Pieces. *Biochemistry*. **28**, 8204-8215 (2001).
- P Sun. To Kill or Not to Kill. *Mol. Immunol.* **38**, 1005-1006 (2002).
- Q Tang, P Carrington, Y Horng, M Maroney, S Ragsdale, D Bocian. X-ray Absorption and Resonance Raman Studies of Methyl-Coenzyme M Reductase Indicating that Ligand Exchange and Macrocycle Reduction Accompany Reductive Activation. *J. Am. Chem. Soc.* **124**, 13242-13256 (2002).
- Y Tsujishita, S Guo, L Stolz, J York, J Hurley. Specificity Determinants in Phosphoinositide Dephosphorylation: Crystal Structure of an Archetypal Inositol Polyphosphate 5-Phosphatase. *Cell*. **105**, 379-389 (2001).
- X Wang, J McLachlan, P Zamore, T Tanaka Hall. Modular Recognition of RNA by a Human Pumilio-Homology Domain. *Cell*. **110**, 501-512 (2002).
- X Wang, T Tanaka-Hall. Structural Basis for Recognition of AU-Rich Element RNA by the HuD Protein. *Nat. Struct. Biol.* **8**, 141-145 (2001).
- J Wang, H Ling, W Yang, R Craigie. Structure of a two-domain Fragment of HIV-1 Integrase: Implications for Domain Organization in the Intact Protein. *EMBO J.* **20**, 7333-7343 (2001).
- A Wlodawer, M Li, Z Dauter, A Gustchina, K Uchida, H Oyama, B Dunn, K Oda. Carboxyl Proteinase from *Pseudomonas* Defines a Novel Family of Subtilisin-Like Enzymes. *Nat. Struct. Biol.* **8**, 442-446 (2001).
- A Wlodawer. Rational Approach to AIDS Drug Design Through Structural Biology. *Annu. Rev. Med.* **53**, 595-614 (2002).
- A Wlodawer, M Li, A Gustchina, Z Dauter, K Uchida, H Oyama, N Goldfarb, B Dunn, K Oda. Inhibitor Complexes of the *Pseudomonas* Serine-Carboxyl Proteinase. *Biochemistry*. **40**, 15602-15611 (2001).
- B Xiao, G Shi, J Gao, J Blaszczyk, Q Liu, X Ji, H Yan. Unusual Conformational Changes in 6-hydroxymethyl-7,8-dihydropterin Pyrophosphokinase as Revealed by X-Ray Crystallography and NMR. *J. Biol. Chem.* **276**, 40274-40281 (2001).
- S Xu, J Gu, G Melvin, L Yu. Structural Characterization of Weakly Attached Cross-Bridges in the A.M.ATP State in Permeabilized Rabbit psoas Muscle. *Biophys. J.* **82**, 2111-2122 (2002).
- S Xu, J Gu, T Rhodes, B Belknap, G Rosenbaum, G Offer, H White, L Yu. The M.ADP.Pi State is Required for helical Order in the Thick Filaments of Skeletal Muscle. *Biophys. J.* **77**, 2665-2676 (1999).
- Beamline X10A**
- J Barnes, W Bras. Temperature-Induced Contrast Variation as a Tool for Characterizing Anisotropic Polymer Microstructures. *Advances in X-ray Analysis, Denver X-ray Conference 2001*, Vol 45, p. 72-77, sponsored by ICDD. (2002).
- W Hu, S Srinivas, E Sirota. Crystalline Structure and Properties of EP and EB Copolymers by Solid-State NMR, DSC, and WAXS. *Macromolecules*. **35**, 5013-5024 (2002).
- S Idziak, S Welch, M Kisilak, C Mugford, G Potvin, L Veldhuis, E Sirota. Undulating membrane structure under mixed extensional-shear. *Eur. Phys. J. D*. **6**, 139-145 (2001).
- H Iwamoto, K Oiwa, T Suzuki, T Fujisawa. States of Thin Filament Regulatory Proteins as Revealed by Combined Cross-linking/X-ray Diffraction Techniques. *J. Mol. Biol.* **317** (5), 707-720 (2002).
- M Kisilak, H Anderson, N Babcock, M Stetzer, S Idziak, E Sirota. An x-ray extensional flow cell. *Rev. Sci. Instrum.* **72** (11), 4305-4307 (2001).
- B Mishra, B Thomas. Phospholipid/Protein Cones. *J. Am. Chem. Soc.* **124**, 6866-6871 (2002).
- C Nuckolls, R Shao, W Jang, N Clark, D Walba, T Katz. Electro-Optic Switching by Helicene Liquid Crystals. *Chem. Mater.* **14** (2), 773-776 (2002).
- B Thomas, C Lindemann, R Corcoran, C Cotant, J Kirsch, P Persichini. Phosphonate Lipid Tubules II. *J. Am. Chem. Soc.* **124** (7), 1227-1233 (2002).
- T Thurn-Albrecht, J DeRouchey, T Russell, R Kolb. Pathways Toward Electric Field Induced Alignment of Block Copolymers. *Macromolecules*. **35**, 8106-8110 (2002).
- S Welch, M Stetzer, G Hu, E Sirota, S Idziak. Intermembrane spacing and velocity profiling of a lamellar lyotropic complex fluid under flow using x-ray diffraction. *Phys. Rev. E*. **65** (6), 061511/1-6 (2002).
- Beamline X10B**
- S Welch, M Stetzer, G Hu, E Sirota, S Idziak. Intermembrane spacing and velocity profiling of a lamellar lyotropic complex fluid under flow using x-ray diffraction. *Phys. Rev. E*. **65** (6), 061511/1-6 (2002).
- W Zhang, B Fu, Y Seo, E Schrag, B Hsiao, P Mather, N Yang, D Xu, H Ade, et al. Effect of Methyl Methacrylate/Polyhedral Oligomeric Silsequioxane Random Copolymers in Compatibilization of Polystyrene and Poly(methyl methacrylate) Blends. *Macromolecules*. **35**, 8029-8038 (2002).
- Beamline X10C**
- M Jaime Vasquez, G Halada, C Clayton. The Application of Synchrotron-based Spectroscopic Techniques to the Study of Chromate Conversion Coatings. *Electrochim. Acta*. **47** (19), 3105-3115 (2002).
- M Jaime Vasquez, G Halada, C Callyton, J Longtin. On the Nature of the Chromate Conversion Coating Formed on Intermetallic Constituents of AA2024-T3. *Surf. Interface Anal.* **33** (7), 607-616 (2001).
- M Vasquez, G Halada, C Clayton. Composition of Chromate Conversion Coatings Formed on multilayered Thin Films of AA2024-T3 matrix and Al2Cu, Al2CuMg and Al20Cu2(FeMn).. Vol PV2001-22, p. 444-453, (2001).

- M Vasquez, G Halada, C Clayton, J Longtin. Composition of Surface Treated Thin Films Analogs of Intermetallic Constituents in AA2024-T3. *Corrosion and Corrosion Prevention of Low Density Metal and Alloys*, Vol PV2000-23, p. 57-68, sponsored by The Electrochemical Society. (2001).
- M Vasquez, G Halada, C Clayton, J Longtin. Effects of Aging on Chromate Conversion Coatings Formed on AA2024-T3 and Some Intermetallic Constituents. *Corrosion and Corrosion Prevention of Low Density Metals and Alloys*, Vol PV2000-23, p. 101-113, sponsored by Electrochemical Society. (2001).
- Beamline X11A**
- Y Arai, D Sparks. Residence Time Effects on Arsenate Surface Speciation at the Aluminum Oxide-water Interface. *Soil Sci.* **167**, 303-314 (2002).
- A Argo, B Gates. Propene Hydrogenation Catalyzed by  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> - Supported Ir<sub>4</sub> Clusters: Inhibition by Dehydrogenated Propene Derivatives on Ir<sub>4</sub>. *Langmuir.* **18** (6), 2183-2189 (2002).
- A Argo, J Odzak, F Lai, B Gates. Observation of Ligand Effects during Alkene Hydrogenation Catalysed by Supported Metal Clusters. *Nature.* **415**, 623-626 (2002).
- S Calvin, E Carpenter, V Harris, S Morrison. Use of multiple-edge refinement of extended x-ray absorption fine structure to determine site occupancy in mixed ferrite nanoparticles. *Appl. Phys. Lett.* **81** (20), 3828-3830 (2002).
- R Dähn, A Scheidegger, A Manceau, M Schlegel, B Baeyens, M Bradbury, M Morales. Neoformation of Ni phyllosilicate upon Ni uptake on montmorillonite. A kinetics study by powder and polarized EXAFS. *Geochim. Cosmochim. Acta.* **66** (13), 2335-2347 (2002).
- L Dieng, A Ignatov, T Tyson, M Croft, F Dogan, C Kim, J Woicik, J Grow. Observation of changes in the atomic and electronic structure of single-crystal YBa<sub>2</sub>Cu<sub>3</sub>O<sub>6.6</sub> accompanying bromination. *Phys. Rev. B: Condens. Matter.* **66**, 014508 (2002).
- C Dodge, A Francis. Photodegradation of a ternary iron(III)-uranium(VI)-citric acid complex. *Environ. Sci. Tech.* **36**, 2094-2100 (2002).
- C Dodge, A Francis, J Gillow, G Halada, C Eng, C Clayton. Association of uranium with iron oxides typically formed on corroding steel surfaces. *Environ. Sci. Tech.* **36** (16), 3504-3511 (2002).
- E Elzinga, R Reeder, S Withers, R Peale, R Mason, K Beck, W Hess. EXAFS Study of Rare-earth Element Coordination in Calcite. *Geochim. Cosmochim. Acta.* **66** (16), 2875-2885 (2002).
- E Elzinga, R Reeder. X-ray absorption spectroscopy study of Cu<sup>2+</sup> and Zn<sup>2+</sup> adsorption complexes at the calcite surface: Implications for site-specific metal incorporation preferences during calcite crystal growth. *Geochim. Cosmochim. Acta.* **66** (22), 3943-3954 (2002).
- E Elzinga, D Sparks. X-ray Absorption Spectroscopy Study of the Effects of pH and Ionic Strength on Pb(II) Sorption to Amorphous Silica. *Environ. Sci. Tech.* **36**, 4352-4357 (2002).
- E Ghabbour, A Scheinost, G Davies. XAFS Studies of Cobalt(II) Binding by Peat, Plant and Soil Derived Solid Humic Acids. *The 20th Anniversary Conference of the International Humic Substances Society*, Vol IHSS 11, p. 277-282, sponsored by International Humic Substances Society. (2002).
- E Ghabbour, A Scheinost, G Davies. XAFS Studies of Cobalt(II) Binding by Peat, Plant and Soil Derived Solid Humic Acids. *Synchrotron Environmental Science-II Conference, May 6-8, 2002*, Vol II, p. 40, sponsored by Advanced Photon Source. (2002).
- J Goellner, J Guzman, B Gates. Synthesis and Structure of Tetrairidium Clusters on TiO<sub>2</sub> Powder: Characterization by Infrared and Extended X-ray Absorption Fine Structure Spectroscopies. *J. Chem. Phys.* **106** (6), 1229-1238 (2002).
- S Heifets, G Stupakov, S Krinsky. CSR Instability in a Bunch Compressor. *Phys. Rev. ST AB.* **5**, 064401 (2002).
- Y Lee, R Reeder, R Wenskus, E Elzinga. Structural relaxation in the MnCO<sub>3</sub>-CaCO<sub>3</sub> solid solution: a Mn K-edge EXAFS study. *Phys. Chem. Miner.* **29**, 585-594 (2002).
- S Maeng, L Axe, T Tyson. Characterization of Gun-Barrel Steel Corrosion as a Function of Time in Concentrated Hydrochloric Acid Solution. *Organometallics.* **58** (4), 370-380 (2002).
- A Mansour, A Marcelli, G Cibin, G Yalovega, T Sevastyanova, A Soldatov. Amorphous Al<sub>90</sub>Fe<sub>x</sub>Ce<sub>10-x</sub> alloys: X-ray Absorption Analysis of the Al, Fe, and Ce Local Atomic and Electronic Structures. *Phys. Rev. B.* **65**, 134207 (2002).
- A Mansour, P Smith, W Baker, M Balasubramanian, J McBreen. In situ XAS investigation of the oxidation state and local structure of vanadium in discharged and charged V<sub>2</sub>O<sub>5</sub> aerogel cathodes. *Electrochim. Acta.* **47**, 3151-3161 (2002).
- A Mansour, S Dallek, P Smith, W Baker. Thermogravimetry and X-Ray Absorption Spectroscopy Study of Heated V<sub>2</sub>O<sub>5</sub>.nH<sub>2</sub>O Aerogels and Ambigels. *J. Electrochem. Soc.* **149** (12), A1589-A1597 (2002).
- D Peak, D Sparks. Mechanisms of Selenate Adsorption on Iron Oxides and Hydroxides. *Environ. Sci. Tech.* **36**, 1460-1466 (2002).
- J Qian. Mercury species in environmental samples studied by spectroscopic methods. Ph.D. Thesis. Department of Forest Ecology, Swedish University of Agricultural Sciences, Umeå. (2001).
- B Ravel, V Harris, E Carpenter. Oxidation of iron in iron/gold core/shell nanoparticles. *J. Appl. Phys.* **91** (10), 8195 (2002).
- B Ravel, M Raphael, V Harris, Q Huang. EXAFS and Neutron Diffraction Studies of the Heusler Alloy Co<sub>2</sub>MnSi. *Phys. Rev. B.* **65** (18), 184431 (2002).
- D Roberts, A Scheinost, D Sparks. Zinc Speciation in a Smelter-Contaminated Soil Profile Using Bulk and Microspectroscopic Techniques. *Environ. Sci. Tech.* **36**, 1742-1750 (2002).
- K Scheckel, J Ryan. Effects of Aging and pH on Dissolution Kinetics and Stability of Chloropyromorphite. *Environ. Sci. Tech.* **36** (10), 2198-2204 (2002).

- P Trivedi, L Axe, T Tyson. An Analysis of Zinc Sorption to Amorphous versus Crystalline Iron Oxides using XAS. *J. Colloid Interface Sci.* **244**, 230-238 (2001).
- P Trivedi, L Axe, T Tyson. XAS Studies of Ni and Zn Sorbed to Hydrous Manganese Oxide. *Environ. Sci. Tech.* **35**, 4515-4521 (2001).

#### Beamline X12B

- A Avgeropoulos, S Paraskeva, N Hadjichristidis, E Thomas. Synthesis and Microphase Separation of Linear Triblock Terpolymers of Polystyrene, High 1,4-Polybutadiene, and High 3,4-Polyisoprene. *Macromolecules*. **35**, 4030-4035 (2002).
- M Baniecki, W McGrath, Z Dauter, W Mangel. Adenovirus proteinase: crystallization and preliminary X-ray diffraction studies to atomic resolution. *Acta Cryst. D*. **D58**, 1462-1464 (2002).
- B Gibbons, P Roach, T Hurley. Crystal Structure of the Autocatalytic INitiator of Glycogen Biosynthesis, Glycogenin. *J. Mol. Biol.* **319** (2), 463-477 (2002).
- I Hayashi, K Vuori, R Liddington. The focal adhesion targeting (FAT) domain of focal adhesion kinase is a four-helix bundle that binds paxillin. *Nat. Struct. Biol.* **9** (2), 101-109 (2002).
- M Lemieux, R Reithmeier, D Wang. Importance of detergent and phospholipid in the crystallization of the human erythrocyte anion-exchanger membrane domain. *J. Struct. Biol.* **137** (3), 322-32 (2002).
- B Mahalingam, P Boross, Y Wang, J Louis, C Fischer, J Tozser, R Harrison, I Weber. Combining mutations in HIV-1 protease to understand mechanisms of resistance. *Proteins: Struc. Func. Genet.* **48**, 107-116 (2002).
- M McDonough, J Anderson, N Silvaggi, R Pratt, J Knox, J Kelly. Structures of Two Kinetic Intermediates Reveal Species Specificity of Penicillin-Binding Proteins. *J. Mol. Biol.* **322** (1), 111-122 (2002).
- V Oganessian, N Oganessian, S Terzyan, D Qu, Z Dauter, N Esmo, C Esmo. The Crystal Structure of the Endothelial Protein C Receptor and a Bound Phospholipid. *J. Biol. Chem.* **277** (28), 24851-24854 (2002).
- J Petock, I Torshin, Y Wang, G DuBois, C Croce, R Harrison, I Weber. Structure of murine Tcl1 at 2.5A resolution and implications for the TCL oncogene family. *Acta Cryst. D*. **D57**, 1545-1551 (2001).
- P Smith, S Firestein, J Hunt. Crystal Structure of Olfactory Marker Protein at 2.3 A resolution. *J. Mol. Biol.* **319** (3), 807-821 (2002).
- S Benson, J Bamford, D Bamford, R Burnett. The X-ray crystal structure of P3, the major coat protein of the lipid-containing bacteriophage PRD1, at 1.65 Å resolution. *Acta Cryst. D*. **58**, 39-59 (2002).
- M Bewley, C Marohnic, M Barber. The structure and biochemistry of NADH-dependent cytochrome b5 reductase are now consistent. *Biochemistry*. **40** (45), 13574-13582 (2001).
- J Brown, K Kim, G Jun, N Greenfield, R Dominguez, N Volkmann, S Hitchcock-DeGregori, C Cohen. Deciphering the design of the tropomyosin molecule. *Proc Natl Acad Sci USA*. **98** (15), 8496-8501 (2001).
- B Brown, A Athanasiadis, E Hanlon, K Lowenhaupt, C Wilbert, A Rich. Crystallization of the Za Domain of the Human Editing Enzyme ADAR1 Complexed with a DNA-RNA Chimeric Oligonucleotide in the Left-handed Z-conformation. *Acta Cryst. D*. **58** (1), 120-123 (2002).
- C Ceccarelli, N Grodsky, N Ariyaratne, R Colman, B Bahnson. Crystal Structure of Porcine Mitochondrial NADP+-dependent Isocitrate Dehydrogenase Complexed with Mn2+ and Isocitrate. *J. Biol. Chem.* **277** (45), 43454-43462 (2002).
- X Chen, S Schauder, N Potier, A Van Dorselaer, I Pelczar, B Bassler, F Hughson. Structural Identification of a Bacterial Quorum-Sensing Signal Containing Boron. *Nature*. **415** (6871), 545-549 (2002).
- C Chen, H Zhang, A Kim, A Howard, G Sheldrick, D Mariano-Dunaway, O Herzberg. Degradation Pathway of the Phosphonate Ciliate: Crystal Structure of 2-Aminoethylphosphonate Transaminase. *Biochemistry*. **41**, 13162-13169 (2002).
- S Dhe-Paganon, K Duda, M Iwamoto, Y Chi, S Shoelson. Crystal Structure of the HNF4 alpha Ligand Domain in Complex with Endogenous Fatty Acid Ligand. *J. Biol. Chem.* **277**, 37973-37976 (2002).
- H Dvir, D Wong, M Harel, X Barril, M Orozco, F Luque, P Camps, T Rosenberry, I Silman, J Sussman. 3D Structure of Torpedo californica Acetylcholinesterase Complexed with Huprine X at 2.1 A Resolution: Kinetic and Molecular Dynamic Correlates. *Biogeochemistry*. **41** (9), 2970-2981 (2002).
- S Swaramoorthy, D Kumaran, S Swaminathan. A Novel Mechanism for Clostridium Botulinum Neurotoxin Inhibition. *Biochemistry*. **41**, 9795-9802 (2002).
- H Feinberg, D Mitchell, K Drickamer, W Weis. Structural Basis for Selective Recognition of Oligosaccharides by DC-SIGN and DC-SIGNR. *Science*. **294**, 2163-2166 (2001).
- A Ferguson, R Chakraborty, B Smith, L Esser, D van der Helm, J Deisenhofer. Structural basis of gating by the outer membrane transporter FecA. *Science*. **295**, 1715-1719 (2002).
- B Gibbons, P Roach, T Hurley. Crystal Structure of the Autocatalytic INitiator of Glycogen Biosynthesis, Glycogenin. *J. Mol. Biol.* **319** (2), 463-477 (2002).
- O Herzberg, C Chen, S Liu, A Tempczyk, A Howard, M Wei, D Ye, D Dunaway-Mariano. Pyruvate Site of Pyruvate Phosphate Dikinase: Crystal Structure of the Enzyme-Phosphopyruvate Complex, and Mutant Analysis. *Biochemistry*. **41** (3), 780-787 (2002).

#### Beamline X12C

- P Arjunan, N Nemeria, A Brunskill, K Chandrasekhar, M Sax, Y Yan, F Jordan, J Guest, W Furey. Structure of the Pyruvate Dehydrogenase Multienzyme Complex E1 Component from Escherichia coli at 1.85 Angstrom Resolution. *Biochemistry*. **41** (16), 5213-5221 (2002).
- P Bar On, C Millard, M Harel, H Dvir, A Enz, J Sussman, I Silman. Kinetic and Structural Studies on the Interaction of Cholinesterases with the Anti-Alzheimer Drug Rivastigmine. *Biochemistry*. **41** (11), 3555-3564 (2002).

- Q Huai, H Kim, Y Liu, Y Zhao, A Mondragon, J Liu, H Ke. Crystal Structure of Calcineurin-cyclophilin-cyclosporin shows Common but Distinct Recognition of Immunophilin-drug Complexes. *Proc Natl Acad Sci USA*. **99** (19), 12037-12042 (2002).
- J Hunt, S Weinkauff, L Henry, J Fak, P McNicholas, D Oliver, J Deisenhofer. Nucleotide Control of Interdomain Interactions in the Conformational Reaction Cycle of SecA. *Science*. **297**, 2018-2026 (2002).
- K Jude, S Wright, C Tu, D Silverman, R Viola, D Christianson. Crystal Structure of F65A/Y131C-Methylimidazole Carbonic Anhydrase V Reveals Architectural Features of an Engineered Proton Shuttle. *Biochemistry*. **41** (8), 2485-2491 (2002).
- T Keating, C Marshall, C Walsh, A Keating. The Structure of VibH Represents Nonribosomal Peptide Synthetase Condensatoin, Cyclization and Epimerization Domains. *Nat. Struct. Biol.* **9** (7), 522-526 (2002).
- W Li, S Srinivasula, J Chai, P Li, J Wu, Z Zhang, E Alnemri, Y Shi. Structural Insights into the Pro-Apoptotic Function of Mitochondrial Serine Protease HtrA2/Omi. *Nat. Struct. Biol.* **9** (6), 436-441 (2002).
- K Lim, H Zhang, A Tempczyk, N Bonander, J Toedt, A Howard, E Eisenstein, O Herzberg. Crystal structure of YecO from *Haemophilus influenzae* (HI0319) reveals a methyltransferase fold and a bound S-adenosylhomocysteine. *Proteins: Struct. Func. Genet.* **45**, 397-407 (2001).
- Y Luo, M Bertero, E Frey, R Pfuetzner, M Wenk, L Creagh, S Marcus, D Lim, F Sicheri, et al. Structural and Biochemical Characterization of the Type III Secretion Chaperones CesT and SigE. *Nat. Struct. Biol.* **8**, 1031-1036 (2001).
- J Madrazo, J Brown, S Litvinovich, R Dominguez, S Yakovlev, L Medved, C Cohen. Crystal structure of the central region of bovine fibrinogen (E5 fragment) at 1.4 Å resolution.. *Proc Natl Acad Sci USA*. **98** (21), 11967-11972 (2001).
- M McDonough, J Anderson, N Silvaggi, R Pratt, J Knox, J Kelly. Structures of Two Kinetic Intermediates Reveal Species Specificity of Penicillin-Binding Proteins. *J. Mol. Biol.* **322** (1), 111-122 (2002).
- J Min, X Zhang, X Cheng, S Grewal, R Xu. Structure of the SET Domain Histone Lysine Methyltransferase Clr4. *Nat. Struct. Biol.* **9** (11), 828 (2002).
- K Newberry, Y Hou, J Perona. Structural Origins of Amino Acid Selection without Editing by CysteinyI-tRNA Synthetase. *EMBO J.* **21** (11), 2778-2787 (2002).
- J Parsons, K Lim, A Tempczyk, E Eisenstein, O Herzberg. From Structure to Function: YrbI from *Haemophilus influenzae* (HI1679) is a Phosphatase. *Proteins: Struct. Func. Genet.* **46**, 394-404 (2002).
- D Shi, R Gallegos, J DePonte III, H Morizono, X Yu, N Allewell, M Malamy, M Tuchman. Crystal structure of a transcarbamylase-like protein from the anaerobic bacterium *Bacteroides fragilis* at 2.0 Å resolution.. *J. Mol. Biol.* **320**, 899 (2002).
- J Sivaraman, V Sauve, R Larocque, E Stura, J Schrag, M Cygler, A Matte. Structure of the 16S rRNA Pseudouridine Synthase RsuA Bound to Uracil and UMP. *Nat. Struct. Biol.* **9**, 353-358 (2002).
- P Smith, S Firestein, J Hunt. Crystal Structure of Olfactory Marker Protein at 2.3 Å resolution. *J. Mol. Biol.* **319** (3), 807-821 (2002).
- E Sundberg, M Sawicki, S Southwood, P Andersen, A Sette, R Mariuzza. Minor Structural Changes in Mutated Human Melanoma Antigen Correspond to Dramatically Enhanced Stimulation of a CD4+ Tumor-infiltrating Lymphocyte Line. *J. Mol. Biol.* **319** (2), 449-461 (2002).
- J Till, M Becerra, A Watty, Y Lu, Y Ma, T Neubert, S Burden, S Hubbard. Crystal structure of the MuSK tyrosine kinase: insights into receptor autoregulation. *Structure*. **10**, 1187-1196 (2002).
- P Van Roey, L Meehan, J Kowalski, M Belfort, V Derbyshire. Catalytic domain structure and hypothesis for function of GIY-YIG intron endonuclease I-TevI. *Nat. Struct. Biol.* **9** (11), 806-811 (2002).
- T Wan, R Beavil, S Fabiane, A Beavil, M Sohi, M KEown, R Young, A Henry, R Owens, et al.. The crystal structure of IgE Fc reveals an asymmetrically bent conformation. *Nat. Immunol.* **3** (7), 681-686 (2002).
- Z Yang, G Spraggon, L Pandi, S Everse, M Riley, R Doolittle. Crystal structure of fragment D from lamprey fibrinogen complexed with the peptide Gly-His-Arg-Pro-amide. *Biochemistry*. **41** (32), 10218-10224 (2002).
- Z Zhang, M Hayashi, O Merkel, B Stillman, R Xu. Structure and Function of the BAH-containing Domain of Orc1p in Epigenetic Silencing. *EMBO J.* **21** (17), 4600-4611 (2002).

### Beamline X13B

- J Ablett, C Kao, A Lunt. The Design and Performance Of An X-Ray Micro-Focusing System Using Differentially Deposited Elliptical Mirrors At The National Synchrotron Light Source. *Rev. Sci. Instrum.* **73** (10), 3464-3468 (2002).
- L Berman, P Siddons, P Montanez, A Lenhard, Z Yin. A Cryogenically Cooled Channel-cut Crystal Monochromator Using a Helium Refrigerator and Heat Exchanger. *Rev. Sci. Instrum.* **73** (3), 1481-1484 (2002).
- Y Hasegawa, Y Ueji, K Okitsu, J Ablett, D Siddons, Y Amemiya. Transmission-type X-ray linear polarizer with perfect crystals. *J. Synch. Rad.* **5** (3), 738-740 (1998).

### Beamline X14A

- J Bai, C Sparks, G Ice. Monte Carlo Ray-Tracing Error Analysis of a Sagittal-Focusing Optical System as Applied to Synchrotron Radiation. *Rev. Sci. Instrum.* **73** (3), 1499-1501 (2002).
- J Kim. Effect of the Substrate-Induced Crystalline Interphase on the Adhesion of Polyurethane to Metals. Ph. D. Thesis. The Pennsylvania State University, (2001).
- J Li. X-ray characterization of CuPt-ordered semiconductor alloy films. *Spontaneous Ordering in Semiconductor Alloys*, Plenum Press/ Kluwer Academic, (2002).



- J Li, R Forrest, S Moss, Y Zhang, A MAscarenhas, J Bai. Determination of the order parameter of CuPt-B ordered GaInP2 films by x-ray diffraction. *J. Appl. Phys.* **91** (11), 9039-9042 (2002).
- Q Qian, T Tyson, C Dubourdien, A Bossak, J Se'natureur, M Deleon, J Bai, G Bonfait. Structural studies of annealed ultrathin La0.8 MnO3 films. *Appl. Phys. Lett.* **80** (15), 2663-2665 (2002).
- C Rawn, C Jones, B Chakoumakous, S Marchall, L Stern, S Kirby, Y Ishii, B Toby. (2001).
- J Rho, S Mishra, K Chung, J Bai, G Pharr. The relationship between microstructure and the nanoindentation properties of intramuscular herring bone. *Ann. Biomed. Eng.* **29** (12), 1082-1088 (2001).
- T Watkins, A McMillan, R Lauf, A Eberhardt. (2001).
- P Williams, J Biernacki, L Walker, H Meyer, C Rawn, J Bai. Microanalysis of alkali-activated fly ash-CH pastes. *Cem. Concr. Res.* **32** (6), 963-972 (2002).
- H Woo. Structural, Transport and Magnetic Studies of Perovskite Bi1-xCaxMnO3. Ph. D. Thesis. New Jersey Institute of Technology, New Jersey. (2001).

#### Beamline X15A

- M Kiss, D Sayers, Z Zhong. Comparison of X-ray detectors for a diffraction enhanced imaging system. *Nucl. Instrum. Meth. A.* **491**, 280-290 (2002).
- I Orion, F Dilmanian, Z Zhong, A Rosenfeld, I Sagi, A Henn, L Peña. X-Ray Synchrotron Beams for Medical Applications: Monte Carlo Simulations and Experiments Results. *MC2000 - Monte Carlo Conference, 23-26 October 2000, Lisbon, Portugal, Vol 1*, p. 93-98, sponsored by L. Tavora. (2000).
- B Tinkham. X-ray Investigation of the initial growth of Si/Ge/Si Heterostructures grown by Surfactant Mediated Epitaxy. Ph.D. Thesis. Northwestern University, Evanston. (2002).
- S Warren, A Reitzle, A Kazimirov, J Ziegler, O Bunk, L Cao, F Renner, D Kolb, M Bedzyk, J Zegenhagen. A structure study of electrodeposited Au on Si(111). *Surf. Sci.* **496**, 287 - 298 (2002).
- J Ziegler, O Bunk, G Scherb, A Kazimirov, L Cao, D Kolb, R Johnson, J Zegenhagen. Pb deposition on n-Si(111):H electrodes: an in-situ x-ray study. *Surf. Sci.* **452**, 150 - 160 (2000).
- J Ziegler, A Reitzle, O Bunk, J Zegenhagen, D Kolb. Metal deposition on n-Si(111):H electrodes. *Electrochim. Acta.* **45**, 4599 - 4605 (2000).

#### Beamline X15B

- P Citrin, D Hamann, P Northrup. Erbium in Si and GaN: extended versus point defects. *Physica B.* **308** (1), 369 (2001).
- P Voyles, D Muller, J Grazul, P Citrin, H Gossmann. Atomic-scale imaging of individual dopant atoms and clusters in highly n-type bulk Si. *Nature.* **416** (6883), 826 - 829 (2002).

#### Beamline X16A

- R Drautz, H Reichert, M Fähnle, H Dosch, J Sanchez. Spontaneous L12 Order at Ni90Al10(110) Surfaces: An X-ray and First-Principles-Calculation Study. *Phys. Rev. Lett.* **87** (23), 236102 (2001).
- I Robinson, P Bennett, F Himpsel. Structure of Quantum Wires in Au/Si(557). *Phys. Rev. Lett.* **88**, 096104-1 (2002).

#### Beamline X16B

- Y Soh, P Evans, Z Cai, B Lai, C Kim, G Aeppli, N Mathur, M Blamire, E Isaac. Local Mapping of Strain at Grain Boundaries in Colossal Magnetoresistive Films using X-ray Microdiffraction. *J. Appl. Phys.* **91** (10), 7742 (2002).

#### Beamline X16C

- A Frenkel, O Kleifeld, S Wasserman, I Sagi. Phase speciation by Extended X-ray Absorption Fine-Structure spectroscopy. *J. Chem. Phys.* **116**, 9449 (2002).
- A Frenkel, C Hills, R Nuzzo. View from the inside: Complexity of the atomic scale ordering in metal nanoparticles. *J. Phys. Chem. B.* **105**, 12689 (2001).
- A Jokic, A Frenkel, M Vairavamurthy, P Huang. Birnessite catalysis of the Maillard reaction: Its significance in natural humification. *Geophys. Res. Lett.* **28**, 3899 (2001).
- J Rodriguez, J Hanson, A Frenkel, J Kim, M Perez. Experimental and Theoretical Studies on the Reaction of H2 with NiO: Role of O Vacancies and Mechanism for Oxide Reduction. *J. Am. Chem. Soc.* **124** (2), 346-354 (2002).
- Y Soh, G Aeppli, F Zimmermann, E Isaacs, A Frenkel. X-ray induced persistent photoconductivity in Si-doped Al0.35Ga0.65As. *J. Appl. Phys.* **90**, 6172 (2001).

#### Beamline X17B1

- J Chen, D Weidner, M Vaughan. The Strength of Mg0.9Fe0.1SiO3 Perovskite at High Pressure and Temperature. *Nature.* **419**, 824 (2002).
- M Croft, I Zakharchenko, Z Zhong, Y Gulak, J Hastings, J Hu, R Holtz, M DaSilva, T Tsakalagos. Strain Field and Scattered Intensity Profiling with Energy Dispersive X-Ray Scattering. *J. Appl. Phys.* **92**, 578-586 (2002).
- B Li, R Liebermann, D Weidner. P-V-Vp-Vs-T Measurements on wadsleyite to 7 Gpa and 873 K: Implications for the 410-km seismic discontinuity. *J. Geophys. Res.* **106** (b12), 30575-30591 (2001).
- W Mao, H Mao, A Goncharov, V Struzhkin, Q Guo, J Hu, J Shu, R Hemley, M Somayazulu, Y Zhao. Hydrogen clusters in clathrate hydrate. *Science.* **297**, 2247-2249 (2002).
- P Raterron, J Chen, D Weidner. A Process for the Low-Temperature Olivine-Spinel Transition under quasi-hydrostatic stress. *Geophys. Res. Lett.* **29** (10), 36-1 to 36-4 (2002).

H Reichert, V Bugaev, O Shchyglo, A Schöps, Y Sikula, H Dosch. Strain-Induced Nonanalytic Short-Range Order in the Spin Glass Cu<sub>83</sub>Mn<sub>17</sub>. *Phys. Rev. Lett.* **87** (23), 236105 (2001).

#### Beamline X17B2

J Chen, D Weidner, M Vaughan. In-situ x-ray diffraction studies of mineralogy with multi-anvil apparatus. *Recent Research Developments in Mineralogy*, p. 13-27, Research Signpost, Trivandrum. (2001).

#### Beamline X17C

M Croft, I Zakharchenko, Z Zhong, Y Gulak, J Hastings, J Hu, R Holtz, M DaSilva, T Tsakalakos. Strain Field and Scattered Intensity Profiling with Energy Dispersive X-Ray Scattering. *J. Appl. Phys.* **92**, 578-586 (2002).

H Cynn, J Klepeis, C Yoo, D Young. Osmium has the Lowest Experimentally Determined Compressibility. *Phys. Rev. Lett.* **88** (13), 135701 (2002).

D Errandonea, M Somayazulu, D Hausermann. CaWO<sub>4</sub>: A new high-pressure and high-temperature phase. *Phys. Status Solidi B*. **231** (1), R1-R3 (2002).

A Kavner, T Duffy. Elasticity and strength of a natural ringwoodite at pressures of the Earth's transition zone. *Geophys. Res. Lett.* **28**, 2691-2694 (2001).

H Liu, C Jin, Y Zhao. Pressure induced structural transitions in nanocrystalline grained selenium. *Physica B*. **315** (1-3), 210-214 (2002).

W Mao, H Mao, A Goncharov, V Struzhkin, Q Guo, J Hu, J Shu, R Hemley, M Somayazulu, Y Zhao. Hydrogen clusters in clathrate hydrate. *Science*. **297**, 2247-2249 (2002).

H Mao, R Hemley. High-pressure transformations in xenon hydrates. *Proc Natl Acad Sci USA*. **99** (1), 25-28 (2002).

J Patterson, A Kudryavtsev, Y Vohra. X-ray Diffraction and Nanoindentation Studies of Nanocrystalline Graphite at High Pressures. *Appl. Phys. Lett.* **81** (11), 2073-2075 (2002).

C Sanloup, H Mao, R Hemley. High-pressure transformations in xenon hydrates. *Proc Natl Acad Sci USA*. **99** (1), 25-28 (2002).

C Sanloup, R Hemley, H Mao. Evidence for xenon silicates at high pressure and temperature. *Geophys. Res. Lett.* **29** (18), 10.1029 (2002).

N Velisavljevic, G Chesnut, Y Vohra, S Weir, V Malba, J Akella. Structural and Electrical Properties of Beryllium Metal at 66 GPa Studied Using Designer Diamond Anvils. *Phys. Rev. B: Condens. Matter*. **65**, 172107 (2002).

X Xie, M Minitti, M Chen, H Mao, D Wang, J Shu, Y Fei. Natural high-pressure polymorph of merrillite in the shock veins of the Suizhou meteorite. *Geochim. Cosmochim. Acta*. **66** (13), 2439-2444 (2002).

#### Beamline X18A

Y Glanville, D Narehood, P Sokol, A Amma, T Mallouk. Preparation and Synthesis of Ag<sub>2</sub>Se Nanowires Produced by Template Directed Synthesis. *J Mater. Chem.* **12** (8), 2433 (2002).

D Silva, P Sokol, S Ehrlich. Mobility Transition of Solid Rare Gases in Confined Environments. *Phys. Rev. Lett.* **88** (15), 155701-1 (2002).

X Sun, X Yang, M Balasubramanian, J McBreen, Y Xia, T Sakai. In situ Investigation of Phase Transitions of Li<sub>1+y</sub>Mn<sub>2</sub>O<sub>4</sub> Spinel during Li-Ion Extraction and Insertion. *J. Electrochem. Soc.* **149**, A842 (2002).

Z Wu, S Ehrlich, B Matthies, K Herwig, P Dai, U Volkmann, F Hansen, H Taub. Growth of n-alkane films on a single-crystal substrate. *Chem. Phys. Lett.* **348**, 168-174 (2001).

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

X Yang, J McBreen, W Yoon, C Grey. Crystal Structure Changes of LiMn<sub>0.5</sub>Ni<sub>0.5</sub>O<sub>2</sub> Cathode Materials during Charge and Discharge Studied by Synchrotron Based In Situ XRD. *Electrochem. Commun.* **4**, 649 (2002).

W Yoon, Y Paik, X Yang, M Balasubramanian, J McBreen, C Grey. Investigation of the Local Structure of the LiNi<sub>0.5</sub>Mn<sub>0.5</sub>O<sub>2</sub> Cathode Material during Electrochemical Cycling by X-Ray Absorption and NMR Spectroscopy. *Electrochem. Solid-State Lett.* **5**, A263 (2002).

Y Zhang, S Ehrlich, R Colella, M Kopecky, M Widom. X-ray Diffuse Scattering in Icosahedral Quasicrystal Al-Pd-Mn. *Phys. Rev. B*. **66**, 104202 (2002).

#### Beamline X18B

F Alamgir, H Jain, G Hug, R Schwarz. EXAFS and EXELFS Study of the Structure of Pd-Ni-P Bulk Metallic Glasses. *Materials Research Society*, Vol 644, p. L2.4.1, (2001).

A Ankudinov, J Rehr, J Low, S Bare. Sensitivity of Pt x-ray absorption near edge structure to the morphology of small Pt clusters. *J. Chem. Phys.* **116** (5), 1911-1919 (2002).

G Chen, S Bare, T Mallouk. Development of supported bifunctional electrocatalysts for unitized regenerative fuel cells. *J. Electrochem. Soc.* **149** (8), A1092-A1099 (2002).

M Farmer, L Boatner, B Chakoumakos, C Rawn, J Richardson, S Khalid. Polymorphism and a phase transition in K<sub>3</sub>Yb(PO<sub>4</sub>)<sub>2</sub>. *International Union of Crystallography, Geneva, Switzerland*, Vol XIX, p. x, sponsored by International Union of Crystallography. (2002).

E Ghabbour, A Scheinost, G Davies. XAFS Studies of Cobalt(II) Binding by Peat, Plant and Soil Derived Solid Humic Acids. *The 20th Anniversary Conference of the International Humic Substances Society*, Vol IHSS 11, p. 277-282, sponsored by International Humic Substances Society. (2002).

E Ghabbour, A Scheinost, G Davies. XAFS Studies of Cobalt(II) Binding by Peat, Plant and Soil Derived Solid Humic Acids. *Synchrotron Environmental Science-II Conference, May 6-8, 2002*, Vol II, p. 40, sponsored by Advanced Photon Source. (2002).

F Huggins, G Huffman, A Kolker, S Mroczkowski, C Palmer, R Finkelman. Combined application of XAFS spectroscopy and sequential leaching for determination of arsenic speciation in coal. *Energ. Fuel*. **16** (5), 1167-1172 (2002).

- F Huggins, G Huffman. X-ray absorption fine structure (XAFS) spectroscopic characterization of emissions from combustion of fossil fuels. *Int. J. Soc. Mat. Eng. Res.* **10** (1), 1-13 (2002).
- G Jacobs, P Patterson, Y Zhang, T Das, J Li, B Davis. Fischer-Tropsch synthesis: Deactivation of Noble Metal Promoted Co/Al<sub>2</sub>O<sub>3</sub> Catalysts. *Appl. Catal. A*. **233**, 215-226 (2002).
- M Olivella, J Palacios, A Vairavamurthy, J del Rio, F de las Heras. A Study of Sulfur Functionalities in Fossil Fuels Using Destructive (ASTM and Py-GC-MS) and non-destructive (SEM-EDX, XANES, and XPS) Techniques. *Fuel*. **81**, 405-411 (2002).
- J Rakovan, R Reeder, E Elzinga, D Cherniak, C Tait, D Morris. Structural Characterization of U(VI) in Apatite by X-ray Absorption Spectroscopy. *Environ. Sci. Tech.* **36** (14), 3114-3117 (2002).
- K Ramanujschary, S Lofland, W McCarroll, T Emge, M Greenblatt, M Croft. Substitutional Effects of 3d Transition Metals on the Magnetic and Structural Properties of Quasi-Two-Dimensional La<sub>5</sub>Mo<sub>4</sub>O<sub>16</sub>. *J. Solid State Chem.* **164**, 60-70 (2002).
- J Rehr, J Low, S Bare. Theoretical interpretation of XAFS and XANES in Pt clusters. *Top. Catal.* **18** (1-2), 3-7 (2002).
- J Shearer, R Scarrow, J Kovacs. Synthetic Models For the Cysteinate-Ligated Non-Heme Iron Enzyme Superoxide Reductase: Observation and Structural Characterization by XAS of an Fe(III)-OOH Intermediate. *J. Am. Chem. Soc.* **124** (39), 11709-11717 (2002).
- T Shoji, F Huggins, G Huffman, W Linak, C Miller. XAFS Spectroscopy Analysis of Selected Elements in Fine Particulate Matter Derived from Coal Combustion. *Energ. Fuel*. **16** (2), 325-329 (2002).
- G Veith, R Chen, G Popov, M Greenblatt, M Croft, I Nowik. Electronic, Magnetic and Magnetoresistance Properties of the n = 2 Ruddlesden-Popper Phases Sr<sub>3</sub>Fe<sub>2-x</sub>CoxO<sub>7-d</sub> (0.25 < x < 1.75). *J. Solid State Chem.* **166**, 292-304 (2002).
- R Viswanathan, G Hou, R Liu, S Bare, F Modica, G Mickelson, C Segre, N Leyarovska, E Smotkin. In situ XANES of carbon-supported Pt-Ru anode electrocatalyst for reformate-air polymer electrolyte fuel cells. *J. Phys. Chem. B*. **106** (13), 3458-3465 (2002).
- W Yoon, Y Paik, X Yang, M Balasubramanian, J McBreen, C Grey. Investigation of the Local Structure of the LiNi<sub>0.5</sub>Mn<sub>0.5</sub>O<sub>2</sub> Cathode Material during Electrochemical Cycling by X-Ray Absorption and NMR Spectroscopy. *Electrochem. Solid-State Lett.* **5**, A263 (2002).
- Beamline X19A**
- S Beauchemin, D Hesterberg, M Beauchemin. Principal component analysis approach for modeling sulfur K-XANES spectra of humic acids. *Soil Sci. Soc. Am. J.* **66**, 83-91 (2002).
- B Bostick, M Vairavamurthy, K Karthikeyan, J Chorover. Cesium Adsorption on Clay Minerals: An EXAFS Spectroscopic Investigation. *Environ. Sci. Tech.* **36**, 2670-2676 (2002).
- A Cady, R Pindak, W Caliebe, P Barois, W Weissflog, H Nguyen, C Huang. Resonant x-ray scattering studies of the B2 phase formed by bent-core molecules. *Liq. Cryst.* **29** (8), 1101-1104 (2002).
- F Huggins, G Huffman, A Kolker, S Mroczkowski, C Palmer, R Finkelman. Combined application of XAFS spectroscopy and sequential leaching for determination of arsenic speciation in coal. *Energ. Fuel*. **16** (5), 1167-1172 (2002).
- F Huggins, G Huffman. X-ray absorption fine structure (XAFS) spectroscopic characterization of emissions from combustion of fossil fuels. *Int. J. Soc. Mat. Eng. Res.* **10** (1), 1-13 (2002).
- C Martinez, M McBride, M Kandianis, J Duxbury, S Yoon, W Bleam. Zinc-sulfur and cadmium-sulfur association in metalliferous peats: evidence from spectroscopy, distribution coefficients, and phytoavailability. *Environ. Sci. Tech.* **36** (17), 3683-3689 (2002).
- L Matkin, S Watson, H Gleeson, P Cluzeau, P Barois, R Pindak, J Pitney, A Cady, C Huang, et al. The interlayer structures of the chiral smectic liquid crystal phases revealed by x-ray resonant scattering. *Phys. Rev. E*. **65**, 41705-41714 (2002).
- H Oh, J Yang, C Costello, Y Wang, S Bare, H Kung, M Kung. Selective catalytic oxidation of CO: Effect of chloride on supported Au catalysts. *J. Catal.* **210** (2), 375-386 (2002).
- M Olivella, J Rio, J Palacios, A Vairavamurthy, F de las Heras. Characterization of humic acid from leonardite coal: an integrated study of Py-GC-MS, XPS and XANES techniques. *J. Anal. Appl. Pyrolysis*. **63**, 59-68 (2002).
- M Olivella, J Palacios, A Vairavamurthy, J del Rio, F de las Heras. A Study of Sulfur Functionalities in Fossil Fuels Using Destructive (ASTM and Py-GC-MS) and non-destructive (SEM-EDX, XANES, and XPS) Techniques. *Fuel*. **81**, 405-411 (2002).
- D Peak, J Sims, D Sparks. Solid State Speciation of Natural and Alum-amended Polutry Litter using XANES Spectroscopy. *Environ. Sci. Tech.* **36**, 4253-4261 (2002).
- J Qian. Mercury species in environmental samples studied by spectroscopic methods. Ph.D. Thesis. Department of Forest Ecology, Swedish University of Agricultural Sciences, Umeå. (2001).
- K Ramanujschary, S Lofland, W McCarroll, T Emge, M Greenblatt, M Croft. Substitutional Effects of 3d Transition Metals on the Magnetic and Structural Properties of Quasi-Two-Dimensional La<sub>5</sub>Mo<sub>4</sub>O<sub>16</sub>. *J. Solid State Chem.* **164**, 60-70 (2002).
- J Rodriguez, J Hrbek. Interaction of sulphur with bimetallic surfaces: Effects of Structural, electronic and chemical properties. *The Chemical Physics of Solid Surfaces: Surface Alloys and Alloy Surfaces*, p. 374, Elsevier, Amsterdam. (2002).
- J Rodriguez, T Jirsak, L Gonzalez, J Evans, M Perez, A Maiti. Reaction of SO<sub>2</sub> with pure and metal-doped MgO: Basic principles for the cleavage of S-O bonds. *J. Chem. Phys.* **115**, 10914 (2001).
- J Rodriguez. Environmental Catalysis and The Chemistry of SO<sub>2</sub> on Oxide Surfaces. *Ciencia*. **9**, 139 (2001).

- T Shoji, F Huggins, G Huffman, W Linak, C Miller. XAFS Spectroscopy Analysis of Selected Elements in Fine Particulate Matter Derived from Coal Combustion. *Energ. Fuel.* **16** (2), 325-329 (2002).
- X Sun, H Lee, X Yang, J McBreen. Synthesis and Study of New Cyclic Boronate Additives for Lithium Battery Electrolytes. *J. Electrochem. Soc.* **149**, A1460 (2002).
- J Tetenbaum, L Miller. A new spectroscopic approach to examining the role of disulfide bonds in the Structure and Unfolding of Soybean Trypsin Inhibitor. *Biochemistry.* **40**, 12215-19 (2001).
- G Veith, R Chen, G Popov, M Greenblatt, M Croft, I Nowik. Electronic, Magnetic and Magnetoresistance Properties of the  $n = 2$  Ruddlesden-Popper Phases  $Sr_3Fe_{2-x}Co_xO_{7-d}$  ( $0.25 < x < 1.75$ ). *J. Solid State Chem.* **166**, 292-304 (2002).
- Beamline X19C**
- M Dudley, W Vetter, P Neudeck. Polytype Identification in Heteroepitaxial 3C-SiC Grown on 4H-SiC Mesas Using Synchrotron White Beam X-ray Topography. *J. Cryst. Growth.* **240**, 22 (2002).
- M Dudley, W Vetter, P Neudeck, J Powell. Polytype Identification and Mapping in Heteroepitaxial Growth of 3C on Atomically Flat 4H-SiC Mesas Using Synchrotron White Beam X-ray Topography. *International Conference on Silicon Carbide and Related Materials 2001*, Vol 389-393, p. 391-394, sponsored by Science & Technology Promotion Foundation of Ibaraki (et al). (2002).
- S Ha, W Vetter, M Dudley, M Skowronski. A Simple Mapping Method for Elementary Screw Dislocations in Homoepitaxial SiC Layers", . *International Conference on Silicon Carbide and Related Materials 2001*, Vol 389-393, p. 443-446, sponsored by Science & Technology Promotion Foundation of Ibaraki (et al). (2002).
- S Ha, M Skowronski, W Vetter, M Dudley. Basal Plane Slip and Formation of Mixed-Tilt Boundaries, in Sublimation-Grown Hexagonal Polytype Silicon Carbide Single Crystals. *J. Appl. Phys.* **92**, 778-785 (2002).
- M Hollingsworth, M Brown, M Dudley, H Chung, M Peterson, A Hillier. Template Effects, Asymmetry and Twinning in Helical Inclusion Compounds. *Angew. Chem. Int. Ed.* **41**, 965-969 (2002).
- M Li, M Schlossman. X-ray scattering of thin liquid films: Beyond the harmonic approximation. *Phys. Rev. E.* **65**, 061608 (2002).
- D Li, B Yang, S Rice. Structure of the liquid-vapor interface of a dilute ternary alloy: Pb and Sn in Ga. *Phys. Rev. B: Condens. Matter.* **65** (22), 224202 (2002).
- M Li, A Tikhonov, M Schlossman. An X-ray diffuse scattering study of domains in  $F(CF_2)_{10}(CH_2)_2OH$  monolayers at the hexane-water interface. *Europhys. Lett.* **58** (1), 80 (2002).
- P Neudeck, J Powell, A Trunek, D Spry, G Beheim, E Benavage, P Abel, W Vetter, M Dudley. Homoepitaxial "Web Growth" of SiC to Terminate c-axis Screw Dislocations and Enlarge Step-Free Surfaces. *International Conference on Silicon Carbide and Related Materials 2001*, Vol 389-393, p. 251-254, sponsored by Science & Technology Promotion Foundation of Ibaraki (et al). (2002).
- P Neudeck, J Powell, A Trunek, X Huang, M Dudley. Growth of defect-free 3C-SiC on 4H- and 6H-SiC Mesas Using Step-Free Surface Heteroepitaxy. *International Conference on Silicon Carbide and Related Materials 2001*, Vol 389-393, p. 311-314, sponsored by Science & Technology Promotion Foundation of Ibaraki (et al). (2002).
- P Neudeck, J Powell, G Beheim, E Benavage, P Abel, A Trunek, D Spry, M Dudley, W Vetter. Enlargement of Step-Free SiC Surfaces by Homoepitaxial Web-Growth of Thin SiC Cantilevers. *J. Appl. Phys.* **92**, 2391-2400 (2002).
- B Raghothamachar. Synchrotron white beam x-ray characterization of growth defects in bulk compound semiconductors. Ph.D. Thesis. State Univ. of New York at Stony Brook, Stony Brook. (2001).
- B Raghothamachar, W Vetter, M Dudley, R Dalmau, R Schlessler, Z Sitar, E Michaels, J Kolis. Synchrotron White Beam Topography Characterization of Physical Vapor Transport Grown AlN and Ammonothermal GaN. *J. Cryst. Growth.* **246**, 271-280 (2002).
- J Rojo, L Schowalter, G Slack, K Morgan, J Barani, S Schujman, S Biswas, B Raghothamachar, M Dudley, et al.. Progress in the Preparation of Aluminum Nitride Substrates from Bulk Crystals. *Materials Research Society Spring Meeting 2002*, Vol 722, p. 5-13, sponsored by Materials Research Society. (2002).
- E Sanchez, S Ha, J Grim, M Skowronski, W Vetter, M Dudley, R Bertke, W Mitchel. Assessment of Polishing Related Surface Damage in Silicon Carbide. *J. Electrochem. Soc.* **149**, G131 (2001).
- E Sanchez, J Liu, M De Graef, M Skowronski, W Vetter, M Dudley. Nucleation of Threading Dislocations in Sublimation Grown Silicon Carbide. *J. Appl. Phys.* **91**, 1143-1148 (2002).
- M Schlossman. Liquid-liquid interfaces: studied by X-ray and neutron scattering. *Diabetes.* **7**, 235-243 (2002).
- Y Seo, K Kim, K Shin, H White, M Rafailovich, J Sokolov, B Lin, H Kim, C Zhang, et al. Morphology of Amphiphilic Gold/Dendrimer Nanocomposite Monolayers. *Langmuir.* **18**, 5927-5932 (2002).
- M Skowronski, J Liu, W Vetter, M Dudley, C Hallin, H Lendenmann. Recombination-Enhanced Defect Motion in Forward-Biased 4H-SiC p-n Diodes. *J. Appl. Phys.* **92**, 4699-4704 (2002).
- B Kromme, K Palle, C Poweleit, L Bryant, W Vetter, M Dudley, K Moore, T Gehoski. Oxidation-Induced Crystallographic Transformation in Heavily N-Doped 4H-SiC Wafers. *International Conference on Silicon Carbide and Related Materials 2001*, Vol 389-393, p. 455-458, sponsored by Science & Technology Promotion Foundation of Ibaraki (et al). (2002).
- W Vetter, D Gallagher, M Dudley. Synchrotron White-beam X-ray Topography of Ribonuclease S Crystals. *Acta Cryst. D.* **D58**, 579-584 (2002).

- W Vetter, H Totsuka, M Dudley, B Kahr. The Perfection and Defect Structure of Organic Hourglass Inclusion K<sub>2</sub>SO<sub>4</sub> Crystals. *J. Cryst. Growth*. **241**, 498-506 (2002).
- E Vetter, M Dudley. Partial Dislocations in the X-ray Topography of As-Grown Hexagonal Silicon Carbide Crystals. *Mater. Sci. Eng. A*. **B87**, 173-177 (2001).
- M Wijesundara, G Zajac, E Fuoco, L Hanley. Aging of Fluorocarbon Thin Films Deposited on Polystyrene from Hyperthermal C<sub>3</sub>F<sub>5</sub><sup>+</sup> and CF<sub>3</sub><sup>+</sup> Ion Beams. *J. Adhes. Sci. Technol.* **15**, 599-612 (2001).

### Beamline X20A

- R Christianson, Y Wang, S LaMarra, R Birgeneau, V Kiryukhin, T Masuda, I Tsukada, K Uchinokura, B Keimer. X-ray Scattering Study of the Incommensurate Phase in Mg-Doped CuGeO<sub>3</sub>. *Phys. Rev. B: Condens. Matter*. **66**, 174105 (2002).
- M Doerner, X Bian, M Madison, K Tang, Q Peng, A Polcyn, T Arnoldussen, M Toney, M Mirzamaani, et al.. Demonstration of 35 Gbit/in<sup>2</sup> Media on a Glass Substrate. *IEEE Trans. Magn.* **37** (2), 1052 (2001).
- J Hanan, E Üstündag, D Dragoi, I Noyan, D Haefner, P Lee. Residual Stresses in Ti-SiC Composites. *Adv. X-Ray Anal.* **44**, 156-161 (2001).
- J Hanan. Damage Evolution in Uniaxial SiC Fiber Reinforced Ti Matrix Composites. Ph.D. Thesis. California Institute of Technology, Pasadena. (2002).
- J Hanan, C Aydiner, E Üstündag, G Swift, S Kaldor, I Noyan. Characterization of Fiber/Matrix Interfaces Using X-Ray Microtopography. *Mater. Sci. Forum*. **404-407**, 919-924 (2001).
- S Kaldor. X-ray Microbeam Studies of Anticlastic Curvature in Elastically Bent Silicon Beams and Plates. Ph.D. Thesis. Columbia University, New York. (2002).
- S Kaldor, I Noyan. Differentiating between elastically bent rectangular beams and plates. *Appl. Phys. Lett.* **80** (13), 2284-2286 (2002).
- S Kiselev, V Khmelenko, D Lee, V Kiryukhin, R Boltnev, E Gordon, B Keimer. Structural studies of impurity-helium solids. *Phys. Rev. B*. **65**, 024517 (2001).
- S Kiselev, V Khmelenko, D Lee, V Kiryukhin, R Boltnev, E Gordon, B Keimer. X-ray Studies of Structural Changes of Impurity-Helium Solids. *J. Low Temp. Phys.* **126**, 235 (2002).
- L Oblonsky, A Davenport, M Ryan, M Toney. In-situ XRD Study of the Passive Film that Forms on Iron in Borate Buffer. *Proceedings of 8th International Conference on Passivity of Metals and Semiconductors 1999, Jasper, Canada*, p. 173-179, (2001).
- A Ozcan, K Ludwig, P Rebbi, C Cabral, Jr., C Lavoie, J Harper. Texture of TiSi<sub>2</sub> Thin Films on Si(001). *J. Appl. Phys.* **92**, 5011 (2002).
- S Park, R Leheny, R Birgeneau, J Gallani, C Garland, G Iannacchione. Hydrogen-bonded silica gels dispersed in a smectic liquid crystal: A random field XY system. *Phys. Rev. E*. **65** (5), 050703(R) (2002).
- M Ryan, M Toney, L Oblonsky, A Davenport. The Structure of the Passive Film that Forms on Iron in Aqueous Environments. *Solid-Liquid Interface Theory*, p. 85, American Chemical Society, Washington. (2001).

### Beamline X20C

- J Chun, P Desjardins, C Lavoie, I Petrov, C Cabral, Jr., J Greene. Interfacial Reaction Pathways and Kinetics During Annealing of 111-textured Al/TiN Bilayers: A Synchrotron X-ray Diffraction and Transmission. *J. Vac. Sci. Technol., A*. **19**, 2207 (2001).
- F D'Heurle, S Zhang, C Lavoie, P Gas, C Cabral, Jr., J Harper. Formation of C<sub>54</sub> TiSi<sub>2</sub>: Effect of Niobium Addition on the Apparent Activation Energy. *J. Appl. Phys.* **90** (11), 6409 (2001).
- M Doerner, X Bian, M Madison, K Tang, Q Peng, A Polcyn, T Arnoldussen, M Toney, M Mirzamaani, et al.. Demonstration of 35 Gbit/in<sup>2</sup> Media on a Glass Substrate. *IEEE Trans. Magn.* **37** (2), 1052 (2001).
- H Ishibashi, T Yoo, Y Hor, A Borissov, Y Horibe, P Radaelli, S Cheong, V Kiryukhin. X-ray-induced Disorder of the Dimerization Pattern and Apparent Low-temperature Enhancement of Lattice Symmetry in Spinel CuIr<sub>2</sub>S<sub>4</sub>. *Phys. Rev. B: Condens. Matter*. **66**, 144424 (2002).
- S Kaldor. X-ray Microbeam Studies of Anticlastic Curvature in Elastically Bent Silicon Beams and Plates. Ph.D. Thesis. Columbia University, New York. (2002).
- S Kaldor, I Noyan. Differentiating between elastically bent rectangular beams and plates. *Appl. Phys. Lett.* **80** (13), 2284-2286 (2002).
- H Kim, C Cabral, Jr., C Lavoie, S Rosnagel. Diffusion Barrier Properties of Transition Metal Thin Films Grown by Plasma Enhanced Atomic Layer Deposition. *J. Vac. Sci. Technol., B*. **20** (4), 1321 (2002).
- V Kiryukhin, T Koo, A Borissov, Y Kim, S Nelson, J Hill, D Gibbs, S Cheong. Common Features of nanoscale structural correlations in magnetoresistive manganites with a ferromagnetic low-temperature state. *Phys. Rev. B*. **65**, 094421 (2002).
- C Lavoie, C Cabral, Jr., F D'Heurle, J Jordan-Sweet, J Harper. Effects of Alloying Elements on Cobalt Silicide Formation. *J. Electron. Mater.* **31** (6), 597 (2002).
- G Lucadamo, K Barmak, C Lavoie, C Cabral, Jr., C Michaelsen. Metastable and Equilibrium Phase Formation in Sputter Deposited Ti/Al Multilayer Films. *J. Appl. Phys.* **91** (12), 9575 (2002).
- R Martel, V Derycke, C Lavoie, J Appenzeller, K Chan, J Tersoff, P Avouris. Ambipolar Electrical Transport in Semiconducting Single-wall Carbon Nanotubes. *Phys. Rev. Lett.* **87**, 256805 (2001).
- L Oblonsky, A Davenport, M Ryan, M Toney. In-situ XRD Study of the Passive Film that Forms on Iron in Borate Buffer. *Proceedings of 8th International Conference on Passivity of Metals and Semiconductors 1999, Jasper, Canada*, p. 173-179, (2001).
- A Ozcan, K Ludwig, P Rebbi, C Cabral, Jr., C Lavoie, J Harper. Texture of TiSi<sub>2</sub> Thin Films on Si(001). *J. Appl. Phys.* **92**, 5011 (2002).
- A Ozcan, K Ludwig, Jr., C Lavoie, C Cabral, Jr., J Harper, R Bradley. Nucleation and Growth Kinetics of Preferred C<sub>54</sub> TiSi<sub>2</sub> Orientations: Time-resolved X-ray Diffraction Measurements. *J. Appl. Phys.* **92**, 5189 (2002).

A Ozcan, K Ludwig, Jr., C Cabral, Jr., J Harper. In Situ Studies of Silicide Formation in TiTa Bilayer Thin Films on Poly-Silicon. *Materials Research Society Symposium*, Vol 721, p. 1, sponsored by Materials Research Society. (2002).

S Park, R Leheny, R Birgeneau, J Gallani, C Garland, G Iannacchione. Hydrogen-bonded silica gels dispersed in a smectic liquid crystal: A random field XY system. *Phys. Rev. E*. **65** (5), 050703(R) (2002).

M Ryan, M Toney, L Oblonsky, A Davenport. The Structure of the Passive Film that Forms on Iron in Aqueous Environments. *Solid-Liquid Interface Theory*, p. 85, American Chemical Society, Washington. (2001).

### Beamline X21

K Hamalainen, S Manninen. Resonant and Non-Resonant Inelastic X-Ray Scattering. *J. Phys.: Condens. Matter*. **13**, 7539 (2001).

H Hayashi, Y Udagawa, W Caliebe, C Kao. Hidden Electronic State of CuO Revealed by Resonant Inelastic X-ray Scattering. *Phys. Rev. B*. **66**, 033105-1 (2002).

S Huotari, K Hamalainen, J Laukkanen, A Soininen, S Manninen, C Kao, T Buslaps, M Mezouar, H Kao. High Pressure Compton Scattering. *AIRAPT-17, International Conference on Science and Technology of High Pressure*, Vol 2, p. 1017, (2000).

J Soininen, K Hamalainen, W Caliebe, C Kao, E Shirley. Core Hole - Electron Interaction in X-Ray Raman Scattering. *J. Phys.: Condens. Matter*. **13**, 8039 (2001).

J Soininen, K Hamalainen, S Manninen. Final-state Electron-electron Interaction in Compton Scattering. *Phys. Rev. B: Condens. Matter*. **64** (1-7), 125116 (2001).

L Yang, H Huang. Observation of a Membrane Fusion Intermediate Structure. *Science*. **297** (5588), 1877-1879 (2002).

### Beamline X22A

A Baptiste, A Gibaud, J Bardeau, K Wen, R Maoz, J Sagiv, B Ocko. X-Ray, Micro-Raman, and Infrared Spectroscopy Structural Characterization of Self-Assembled Multilayer Silane Films with Variable Numbers of Stacked Layers. *Langmuir*. **18** (10), 3916-3922 (2002).

J DeVilbiss, J Wang, B Ocko, K Tamura, R Adzic, I Vartanyants, I Robinson. Time Response of the Thin Layer Electrochemical Cell Used for in situ X-ray Diffraction. *Electrochim. Acta*. **47**, 3057-3064 (2002).

E DiMasi, J Fossum, T Gog, C Venkataraman. Orientational order in gravity dispersed clay colloids: a synchrotron x-ray scattering study of Na fluorohectorite suspensions. *Phys. Rev. E*. **64**, 61704 (2001).

K Tamura, B Ocko, J Wang, R Adzic. Structure of Active Adlayers on Bimetallic Surfaces: Oxygen Reduction on Au(111) with Bi Adlayers. *J. Phys. Chem. B*. **106**, 3896-3901 (2002).

Z Ye, B Noheda, M Dong, D Cox, G Shirane. Monoclinic phase in the relaxor-based piezoelectric/ferroelectric  $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3\text{-PbTiO}_3$ . *Phys. Rev. B: Condens. Matter*. **64**, 184114 (2001).

### Beamline X22B

E DiMasi, H Tostmann. Surface Induced Order in Liquid Metal Alloys. *Synch. Rad. News*. **12**, 41 (1999).

E DiMasi, L Gower. Synchrotron X-ray Observations of a Monolayer Template for Mineralization. *Materials Research Society Fall Meeting 2001*, Vol 711, p. 301, sponsored by Materials Research Society. (2002).

O Gang, M Fukuto, P Huber, P Pershan. Wetting of Hydrocarbon Liquid Surfaces by Fluorocarbon Vapor: A Microscopic Study. *Coll. Surf. A*. **206**, 293 (2002).

P Huber, O Shpyrko, P Pershan, B Ocko, E DiMasi, W Press. Tetra Point Wetting at the Free Surface of Liquid Ga-Bi. *Phys. Rev. Lett.* **89**, 35502 (2002).

P Huber, O Shpyrko, P Pershan, H Tostmann, E DiMasi, B Ocko, M Deutsch. Wetting behavior at the free surface of a liquid gallium-bismuth alloy: an x-ray reflectivity study close to the bulk monotectic point. *Coll. Surf. A*. **206** (1-3), 515-520 (2002).

T Koo, V Kiryukhin, P Sharma, J Hill, S Cheong. Magnetic-field-induced collapse of charge-ordered nanoclusters and the colossal magnetoresistance effect in  $\text{Nd}_{0.3}\text{Sr}_{0.3}\text{MnO}_3$ . *Phys. Rev. B*. **64**, 220405 (2001).

W Pao, M Stetzer, P Heiney, W Cho, V Percec. X-ray Reflectivity Study of Langmuir Films of Amphiphilic Monodendrons. *J. Phys. Chem. B*. **105**, 2170-2176 (2001).

T Seydel, M Tolan, B Ocko, O Seeck, R Weber, E DiMasi, W Press. Freezing of capillary waves at the glass transition. *Phys. Rev. B*. **65** (18), 184207 (2002).

K Shin, Y Zhang, H White, M Rafailovich, J Sokolov, D Peiffer. Organoclay Nanoplatelets at the Air/water Interface. *Materials Research Society*, Vol KK8.4, (2001).

E Sloutskin, E Sirota, H Kraack, O Gang, A Doerr, B Ocko, M Deutsch. Surface and bulk phase behavior of dry and hydrated tetradecanol:octadecanol alcohol mixtures. *J. Chem. Phys.* **116** (18), 8056-8066 (2002).

E Sloutskin, H Kraack, B Ocko, J Ellmann, M Moller, P Lo Nostro, M Deutsch. Thermal Expansion of Surface-Frozen Monolayers of Semifluorinated Alkanes. *Langmuir*. **18**, 1963-1967 (2002).

### Beamline X22C

A Baddorf, V Jahns, D Zehner, H Zajonz, D Gibbs. Relaxation and thermal expansion of Ru(0001) between 300 and 1870 K. *Surf. Sci.* **498**, 74 (2002).

D Gibbs, J Hill, C Vettier. New directions in x-ray magnetic scattering. *Third Generation Hard X-ray Synchrotron Radiation Sources: Source Properties, Optics and Experimental Techniques*, p. 267-310, J. Wiley & Sons, Inc., New York. (2002).

- V Kiryukhin, T Koo, A Borissov, Y Kim, S Nelson, J Hill, D Gibbs, S Cheong. Common Features of nanoscale structural correlations in magnetoresistive manganites with a ferromagnetic low-temperature state. *Phys. Rev. B.* **65**, 094421 (2002).
- U Klemradt, M Aspelmeyer, H Abe, L Wood, S Moss, E DiMasi, J Peisl. Premonitory Martensitic Surface Relief via Novel X-ray Diffuse and Laser Light Reflectivity from the (001) Surface of a Ni<sub>63</sub>Al<sub>37</sub> Single Crystal. *Materials Research Society Fall Meeting 1999*, Vol 580, p. 293, sponsored by Materials Research Society. (2000).
- Beamline X23A2**
- F Alamgir, H Jain, G Hug, R Schwarz. EXAFS and EXELFS Study of the Structure of Pd-Ni-P Bulk Metallic Glasses. *Materials Research Society*, Vol 644, p. L2.4.1, (2001).
- S Calvin. Relationship Between Electron Delocalization and Asymmetry of the Pair Distribution Function as Determined by X-Ray Absorption Spectroscopy. Ph.D. Thesis. City University of New York, New York. (2001).
- M Duff, J Coughlin, D Hunter. Uranium Co-precipitation with Iron Oxide Minerals. *Geochim. Cosmochim. Acta.* **66** (20), 3533-3547 (2002).
- D McKeown, I Muller, K Matlack, I Pegg. X-ray absorption studies of vanadium valence and local environment in borosilicate waste glasses using vanadium sulfide, silicate, and oxide standards. *J. Non-Cryst. Solids.* **298**, 160-175 (2002).
- J Rose, M Cortalezzi-Fidalgo, S Moustier, C Magonetto, C Jones, A Barron, M Wiesner, J Bottero. Synthesis and Characterization of Carboxylate-FeOOH Nanoparticles (Ferroxanes) and Ferroxane-Derived Ceramics. *Chem. Mater.* **14** (2), 621-628 (2002).
- A Sahiner, S Novak, J Woicik, J Liu, V Krishnamoorthy. Determining the Ratio of the Precipitated versus Substituted Arsenic by XAFS and SIMS in Heavy Dose Arsenic Implants in Silicon. *Materials Research Society Spring Meeting 2001*, Vol 669, p. J5.8.1-7, sponsored by Materials Research Society. (2001).
- M Sahiner, S Novak, J Woicik, Y Takamura, P Griffin, J Plummer. The Local Structure of Antimony in High Dose Antimony Implants in Silicon by XAFS and SIMS. *MRS Spring 2002*, Vol 717, p. C3.6.1-7, sponsored by Materials Research Society. (2002).
- Beamline X23B**
- S Calvin. Relationship Between Electron Delocalization and Asymmetry of the Pair Distribution Function as Determined by X-Ray Absorption Spectroscopy. Ph.D. Thesis. City University of New York, New York. (2001).
- L Dieng, A Ignatov, T Tyson, M Croft, F Dogan, C Kim, J Woicik, J Grow. Observation of changes in the atomic and electronic structure of single-crystal YBa<sub>2</sub>Cu<sub>3</sub>O<sub>6.6</sub> accompanying bromination. *Phys. Rev. B: Condens. Matter.* **66**, 014508 (2002).
- G Evmenenko, C Yu, J Kmetko, P Dutta. Density Anomalies in Thin Liquid Films of Hydride Functional Siloxanes. *Langmuir.* **18**, 5468-5472 (2002).
- J Malinsky, J Veinot, G Jabbour, S Shaheen, J Andersen, P Lee, A Richter, A Burin, M Ratner, et al. Nanometer-scale Dielectric Self-assembly Process for Anode Modification in Organic Light-Emitting Diodes. Consequences for Charge Injection and Enhanced Luminous Efficiency. *Chem. Mater.* **14**, 3054-3065 (2002).
- P Pfalzer, J Will, A Nateprov, M Klemm, V Eyert, S Horn, A Frenkel, S Calvin, M denBoer. Local Symmetry Breaking in Paramagnetic Insulating (Al,V)<sub>2</sub>O<sub>3</sub>. *Phys. Rev. B: Condens. Matter.* **66**, 085119 (2002).
- B Ravel, M Raphael, V Harris, Q Huang. EXAFS and Neutron Diffraction Studies of the Heusler Alloy Co<sub>2</sub>MnSi. *Phys. Rev. B.* **65** (18), 184431 (2002).
- B Ravel, V Harris, E Carpenter. Oxidation of iron in iron/gold core/shell nanoparticles. *J. Appl. Phys.* **91** (10), 8195 (2002).
- M van der Boom, G Evmenenko, P Dutta, T Marks. Refractive Index Tuning of Siloxane-Based Electro-Optic Self-Assembled Superlattices. *Advanced Materials.* **11** (5), 393-397 (2001).
- M van der Boom, P Zhu, G Evmenenko, J Malinsky, W Lin, P Dutta, T Marks. Nanoscale Consecutive Self-Assembly of Thin-Film Molecular Materials for Electrooptic Switching. Chemical Streamlining and Ultrahigh Response Chromophores. *Langmuir.* **18**, 3703-3704 (2002).
- M van der Boom, G Evmenenko, P Dutta, T Marks. Layer-by-layer self-assembly of intrinsically acentric organic superlattices - characterization of the chromophore deposition step. *Polym. Mater. Sci. Eng.* **87**, 375-376 (2002).
- Beamline X24A**
- T Jach, E Landree. Grazing Incidence X-Ray Photoelectron Spectroscopy: A Method to Study Gate Dielectric Films on Si. *International Symposium on Practical Surface Analysis*, Vol 9, p. 339-343, sponsored by Surface Analysis Society of Japan. (2002).
- C Kim, M Bedzyk, E Nelson, J Woicik, L Berman. Site-specific valence-band photoemission study of alpha-Fe<sub>2</sub>O<sub>3</sub>. *Phys. Rev. B.* **66**, 085115 (2002).
- J Woicik, E Nelson, I Kronik, M Jain, I Chelikowsky, D Heskett, L Berman, G Herman. Hybridization and bond-orbital components in site-specific x-ray photoelectron spectra of rutile TiO<sub>2</sub>. *Phys. Rev. Lett.* **89** (7), 077401 (2002).
- Beamline X24C**
- W Hunter, M Kowalski, J Rife, R Cruddace. Investigation of the properties of an ion-etched plane laminar holographic grating. *Appl. Optics-OT.* **40** (34), 6157-6165 (2001).
- M Kowalski, H Gursky, J Rife, D Yentis, R Cruddace, T Barbee, W Goldstein, J Kordas, K Heidemann, et al.. Efficiency calibration of the four multilayer-coated holographic ion-etched flight gratings for a sounding rocket high-resolution spectrometer. *UV/EUV and Visible Space Instrumentation for Astronomy and Solar Physics*, Vol 4498, p. 303-314, sponsored by SPIE. (2001).

J Long, S Chase, M Kabler. Photoelectron Spectroscopy of Exciton Dynamics and Interactions in Organic Thin Films: C60 and Photopolymerized C60. *AVS 48<sup>th</sup> International Symposium*, Vol 15, sponsored by AVS. (2001).

### Beamline X25

M Baniecki, W McGrath, Z Dauter, W Mangel. Adenovirus proteinase: crystallization and preliminary X-ray diffraction studies to atomic resolution. *Acta Cryst. D*. **D58**, 1462-1464 (2002).

D Battle, J Doudna. Specificity of RNA-RNA Helix Recognition. *Proc Natl Acad Sci USA*. **99** (18), 11676-11681 (2002).

B Benoff, H Yang, C Lawson, G Parkinson, J Liu, E Blatter, Y Ebright, H Berman, R Ebright. Structural Basis of Transcription Activation: the CAP-alphaCTD-DNA Complex. *Science*. **297**, 1562-1566 (2002).

L Berman, Z Yin, Q Shen, K Finkelstein, P Doing, G Pan. Characterization Of A Diamond Crystal X-Ray Phase Retarder. *Rev. Sci. Instrum.* **73** (3), 1502-1504 (2002).

L Berman, P Siddons, P Montanez, A Lenhard, Z Yin. A Cryogenically Cooled Channel-cut Crystal Monochromator Using a Helium Refrigerator and Heat Exchanger. *Rev. Sci. Instrum.* **73** (3), 1481-1484 (2002).

X Bi, R Corpina, J Goldberg. Structure of the Sec23/24-Sar1 Pre-budding Complex of the COPII Vesicle Coat. *Nature*. **419**, 271-277 (2002).

E Campbell, S Masuda, J Sun, O Muzzin, J Anders Olson, S Wang, S Darst. Crystal Structure of the Bacillus stearothermophilus Anti- $\sigma$ Factor SpoIIAB with the Sporulation  $\sigma$  Factor  $\sigma$ . *Cell*. **108**, 795-807 (2002).

E Campbell, O Muzzin, M Chlenov, J Sun, C Olson, O Weinman, M Trester-Zedlitz, S Darst. Structure of the Bacterial RNA Polymerase Promoter Specificity Sigma Subunit. *Mol. Cell*. **9**, 527-539 (2002).

T Chiu, C Sohn, R Dickerson, R Johnson. Testing Water-mediated DNA Recognition by the Hin Recombinase. *EMBO J.* **21**, 801-814 (2002).

H Cho, D Leahy. Structure of the extracellular region of HER3 reveals an interdomain tether. *Science*. **297**, 1330-3 (2002).

D Desveaux, J Allard, N Brisson, J Sygusch. A New Family of Plant Transcription Factors Displays a Novel ssDNA-binding Surface. *Nat. Struct. Biol.* **9** (7), 512-517 (2002).

S Dhe-Paganon, K Duda, M Iwamoto, Y Chi, S Shoelson. Crystal Structure of the HNF4 alpha Ligand Domain in Complex with Endogenous Fatty Acid Ligand. *J. Biol. Chem.* **277**, 37973-37976 (2002).

E DiMasi, H Tostmann. Surface Induced Order in Liquid Metal Alloys. *Synch. Rad. News*. **12**, 41 (1999).

C Drum, S Yan, J Bard, Y Shen, D Lu, S Soelaiman, Z Grabarek, A Bohm, W Tang. Structural Basis for the activation of anthrax adenyl cyclase exotoxin by calmodulin. *Nature*. **415**, 396-402 (2002).

R Dutzler, E Campbell, M Cadene, B Chait, R MacKinnon. X-ray structure of a Cl<sup>-</sup> channel at 3.0 Å reveals the molecular basis of anion selectivity. *Nature*. **415**, 287-294 (2002).

S Gabelli, M Bianchet, Y Ohnishi, Y Ichikawa, M Bessman, L Amzel. Mechanism of the Escherichia coli ADP-Ribose Pyrophosphatase, a Nudix Hydrolase. *Biochemistry*. **41** (30), 9279 - 9285 (2002).

R Gilboa, D Zharkov, G Golan, A Fernandes, S Gerchman, E Matz, J Kycia, A Grollman, G Shoham. Structure of formamidopyrimidine-DNA glycosylase covalently complexed to DNA. *J. Biol. Chem.* **277**, 19811-6 (2002).

Y Ha, D Stevens, J Skehel, D Wiley. H5 Avian and H9 Swine Influenza Virus Haemagglutinin Structures: Possible Origin of Influenza Subtypes. *EMBO J.* **21**, 865-875 (2002).

K Hamalainen, S Manninen. Resonant and Non-Resonant Inelastic X-Ray Scattering. *J. Phys.: Condens. Matter*. **13**, 7539 (2001).

D Ho, G Coburn, Y Kang, B Cullen, M Georgiadis. The Crystal Structure and Mutational Analysis of a Novel RNA-Binding Domain Found in the Human Tap Nuclear mRNA Export Factor. *Proc Natl Acad Sci USA*. **99**, 1888-1893 (2002).

H Ishibashi, T Yoo, Y Hor, A Borissov, Y Horibe, P Radaelli, S Cheong, V Kiryukhin. X-ray-induced Disordering of the Dimerization Pattern and Apparent Low-temperature Enhancement of Lattice Symmetry in Spinel CuIr<sub>2</sub>S<sub>4</sub>. *Phys. Rev. B: Condens. Matter*. **66**, 144424 (2002).

Y Jiang, A Lee, J Chen, M Cadene, B Chait, R MacKinnon. Crystal structure and mechanism of a calcium-gated potassium channel. *Nature*. **417**, 515-522 (2002).

Y Jiang, A Lee, J Chen, M Cadene, B Chait, R MacKinnon. The open pore conformation of potassium channels. *Nature*. **417**, 523-526 (2002).

Y Jiang, A Pico, M Cadene, B Chait, R MacKinnon. Structure of the RCK domain from the E. coli K<sup>+</sup> channel and demonstration of its presence in the human BK channel. *Neuron*. **29**, 593-601 (2001).

J Kieft, K Zhou, A Grech, R Jubin, J Doudna. Crystal Structure of an RNA Tertiary Domain Essential to HCV IRES-mediated Translation Initiation. *Nat. Struct. Biol.* **9** (370-374)(2002).

H Li, T Ryan, K Chave, P Van Roey. Three-dimensional structure of human gamma-glutamyl hydrolase: a class I glutamine amidotransferase adapted for a complex substrate. *J. Biol. Chem.* **277** (27), 24522-24529 (2002).

S Liemann, K Chandran, T Baker, M Nibert, S Harrison. Structure of the Reovirus Membrane-Penetration Protein, u1, in a Complex with its Protector Protein s3. *Cell*. **108**, 283-295 (2002).

T Lister, Y Chu, W Cullen, H You, R Yonco, J Mitchell, Z Nagy. Electrochemical and X-ray scattering study of well defined RuO<sub>2</sub> single crystal surfaces. *J. Electroanal. Chem.* **524**, 201 (2002).

M Marino, M Banerjee, R Jonquieres, P Cossart, P Ghosh. GW domains of the L. monocytogenes invasion protein InlB are SH3-like and mediate binding to host ligands. *EMBO J.* **21**, 5623-5634 (2002).

L Mello, B deGroot, S Li, M Jedrzejas. Structure and Flexibility of Steptococcus agalactiae Hyaluronate Lyase Complex with its Substrate. *J. Biol. Chem.* **277** (39), 36678-36688 (2002).



- S Montano, M Cote, I Fingerman, M Pierce, A Vershon, M Georgiadis. Crystal Structure of the DNA-binding Domain from Ndt80, a Transcriptional Activator Required for Meiosis in Yeast. *Proc Natl Acad Sci USA*. **99** (22), 14041-14046 (2002).
- A Mulichak, H Losey, C Walsh, R Garavito. Structure of the UDP-glucosyltransferase GtfB that modifies the heptapeptide aglycone in the biosynthesis of vancomycin group antibiotics. *Structure*. **9**, 547-557 (2001).
- K Murakami, S Masuda, E Campbell, O Muzzin, S Darst. Structural basis of transcription initiation: An RNA polymerase holoenzyme/DNA complex. *Science*. **296**, 1285-1290 (2002).
- K Murakami, S Masuda, S Darst. Structural basis of transcription initiation: T. aquaticus RNA polymerase holoenzyme at 4 Å resolution. *Science*. **296**, 1280-1284 (2002).
- A Prota, D Sage, T Stehle, J Fingerroth. The Crystal Structure of Human CD21: Implications for Epstein-Barr Virus and C3d Binding. *Proc Natl Acad Sci USA*. **99** (16), 10641-10646 (2002).
- M Renuatus, H Stennicke, F Scott, R Liddington, G Salvesen. Dimer Formation Drives the Activation of the Cell Death Protease Caspase 9. *Proc Natl Acad Sci USA*. **98**, 14250-14255 (2002).
- M Sintchak, G Arjara, B Kellogg, J Stubbe, C Drennan. The Crystal Structure of Class II Ribonucleotide Reductase Reveals How an Allosterically Regulated Monomer Mimics a Dimer. *Nat. Struct. Biol.* **9** (4), 293-300 (2002).
- S Soelaiman, K Jakes, N Wu, C Li, M Shoham. Crystal Structure of Colicin E3: Implications for Cell Entry and Ribosome Inactivation. *Mol. Cell*. **8**, 1053-1062 (2001).
- E Sundberg, M Sawicki, S Southwood, P Andersen, A Sette, R Mariuzza. Minor Structural Changes in Mutated Human Melanoma Antigen Correspond to Dramatically Enhanced Stimulation of a CD4+ Tumor-infiltrating Lymphocyte Line. *J. Mol. Biol.* **319** (2), 449-461 (2002).
- F Valiyaveetil, Y Zhou, R MacKinnon. Lipids in the structure, folding, and function of the KcsA K(+) channel. *Biochemistry*. **41** (35), 10771-10777 (2002).
- L Zhang, J Doudna. Structural insights into group II intron catalysis and branch-site selection. *Science*. **295**, 2084-8 (2002).
- R Zhao, E Collins, R Bourret, R Silversmith. Structure and Catalytic Mechanism of the E. Coli Chemotaxis Phosphatase CheZ. *Nat. Struct. Biol.* **9** (8), 570-575 (2002).
- D Zharkov, G Golan, R Gilboa, A Fernandes, S Gerchman, J Kycia, R Reiger, A Grollman, G Shoham. Structural analysis of Escherichia coli endonuclease VIII: its covalent reaction intermediate. *EMBO J.* **21**, 789-800 (2002).
- Beamline X26A**
- Y Arai, D Sparks. Residence Time Effects on Arsenate Surface Speciation at the Aluminum Oxide-water Interface. *Soil Sci*. **167**, 303-314 (2002).
- A Banas, W Kwiatek, W Zajac. Trace element analysis of tissue section by means of synchrotron radiation: the use of GNUMPLOT for SRIXE spectra analysis. *J. Alloys Compd.* **328**, 135-138 (2001).
- W Bassett, A Anderson, R Mayanovic, I Chou. Hydrothermal diamond anvil cell for XAFS studies of first-row transition elements in aqueous solution up to supercritical conditions. *Chem. Geol.* **167**, 3-10 (2000).
- A Becker, W Klock, K Friese, P Schreck, H Treutler, B Spettel, M Duff, W Eisenacher. Lake Susser See as a natural sink for heavy metals from copper mining. *J. Geochem. Explor.* **74** (1-3), 205-217 (2001).
- E Bloodaxe, J Hughes, M Dyar, E Grew, C Guidotti. Tourmaline: linking structure and chemistry. *Am. Mineral.* **84**, 922-928 (1999).
- S Bosze, J Rakovan. Surface structure controlled sectoral zoning of REE, Sr, and Y in fluorite. *Geochim. Cosmochim. Acta*. **66**, 997-1009 (2002).
- J Cole, J Nienstedt, G Spataro, E Rasbury, A Lanzirrotti, A Celestian, M Nilsson, G Hanson. Phosphor imaging as a tool for in situ mapping of ppm levels of uranium and thorium in rocks and minerals. *Chem. Geol.* **193** (1-2), 127-136 (2002).
- C Dalpe, D Baker. Experimental investigation of large ion lithophile element, high field strength element, and rare earth element partitioning between calcic amphibole and basaltic melt: the effects of pressure and oxygen fugacity. *Contrib. Mineral Petr.* **140**, 233-250 (2000).
- A Davenport, M Ryan, M Simmonds, P Ernst, R Newman, S Sutton. In situ synchrotron x-ray microprobe studies of passivation thresholds in Fe-Cr alloys. *J. Electrochem. Soc.* **148** (6), B217-B221 (2001).
- J Delaney, M Dyar, S Sutton. Quantifying X-ray pleochroism effects in synchrotron micro-XANES analysis of elemental oxidation states. *Lunar and Planetary Science Conference*, Vol 32, p. 1936, sponsored by Lunar and Planetary Institute. (2001).
- J Delaney, M Dyar. What we should be looking for in Martian meteorites? Is evidence of crustal process or mantle process more important... and to whom?. *Unmixing the SNC's*, p. 6021, sponsored by Lunar and Planetary Institute. (2002).
- J Delaney, M Dyar. Compositional and oxidation state zoning in martian pyroxene: Paradox or process indicator. *Lunar and Planetary Science Conference*, Vol 33, p. 1659, sponsored by Lunar and Planetary Institute. (2002).
- J Delaney, G Mollel, G Ashley, M Dyar, S Sutton. Micrometer scale ferric/ferrous zoning quantified by synchrotron micro-XANES spectroscopy of pyroxene phenocrysts in phonolitic eruptives from Plio-Pleistocene volcano, Satiman, Tanzania. *Eos, Transactions of the American Geophysical Union, Fall Meeting Suppl.*, Vol 82, p. V32D-0996, sponsored by EOS Trans, AGU. (2001).
- J Delaney, M Dyar. Magmatic magnetite in martian meteorite melt inclusions from Chassigny. *Meteoritics & Planet. Sci.* **36 Suppl**, A48 (2001).
- M Duff, J Coughlin, D Hunter. Uranium Co-precipitation with Iron Oxide Minerals. *Geochim. Cosmochim. Acta*. **66** (20), 3533-3547 (2002).

- M Dyar, G Rossman, J Delaney, S Sutton, M Newville. Interpretations of Fe-XANES pre-edge spectra: predictions based on Co and Fe optical spectra. *Lunar and Planetary Science Conference*, Vol 32, p. 1816, sponsored by Lunar and Planetary Institute. (2001).
- M Dyar, J Delaney, C Tegner. Ferric iron in feldspar as an indicator of evolution of planetary oxygen fugacity. *Lunar and Planetary Science Conference*, Vol 32, p. 1065, sponsored by Lunar and Planetary Institute. (2001).
- M Dyar, J Delaney, S Sutton. Fe XANES spectra of iron-rich micas. *Eur. J. Mineral.* **13** (6), 1079-1098 (2001).
- M Dyar, E Lowe, C Guidotti, J Delaney. Fe<sup>3+</sup> and Fe<sup>2+</sup> partitioning among silicates in metapelites: A synchrotron micro-XANES study. *Am. Mineral.* **87**, 514-522 (2002).
- M Dyar. Mossbauer and optical spectra of micas. *Advances in Micas*, p. 313-349, Mineralogical Society of America, Washington. (2002).
- M Dyar, M Gunter, J Delaney, A Lanzirrotti, S Sutton. Use of the spindle stage for orientation of single crystals for microXAS: Isotropy and anisotropy in Fe-XANES spectra. *Am. Mineral.* **87**, 1500-1504 (2002).
- E Elzinga, R Reeder. X-ray absorption spectroscopy study of Cu<sup>2+</sup> and Zn<sup>2+</sup> adsorption complexes at the calcite surface: Implications for site-specific metal incorporation preferences during calcite crystal growth. *Geochim. Cosmochim. Acta.* **66** (22), 3943-3954 (2002).
- J Flinn, D Hunter, A Lanzirrotti, B Jones. Effects of Enhanced in Drinking Water on Brain and Memory. *Biogeomon, 4th International Conference*, Vol 1, p. 47, sponsored by Villanova University, Czech Geological Survey. (2002).
- J Fredricon, J Zachara, D Kennedy, C Liu, M Duff, D Hunter, A Dohnalkova. Influence of Mn oxides on the reduction of U(VI) by the metal-reducing bacterium *Shewanella putrefaciens*. *Geochim. Cosmochim. Acta.* **66** (18), 3247-3262 (2002).
- C Guest, D Schulze, I Thompson, D Huber. Correlating Manganese X-Ray Absorption Near-Edge Structure Spectra with Extractable Soil Manganese. *Soil Sci. Soc. Am. J.* **66**, 1172-1181 (2002).
- M Gunter, M Dyar, J Delaney, S Sutton, A Lanzirrotti. Effects of preferred orientation on microscale XANES measurements of Fe<sup>3+</sup>/total Fe in biopyriboles. *Lunar and Planetary Science Conference*, Vol 33, p. 1654, sponsored by Lunar and Planetary Institute. (2002).
- D Hunter, W Gates, P Bertsch, K Kemner. Degradation of tetraphenylboron at hydrated smectite surfaces studied by time resolved IR and X-ray absorption. *Mineral Water Interfacial Reactions: Kinetics and Mechanisms*, p. 282-300, American Chemical Society, (1999).
- W Kwiatek, M Galka, A Hanson, C Paluszkiwicz, T Cichocki. XANES as a tool for iron oxidation state determination in tissues. *J. Alloys Compd.* **328**, 276-282 (2001).
- E Lowe. Distribution coefficients for ferric and ferrous iron in metapelites from western Maine. B.A. Thesis. Mount Holyoke College, South Hadley. (2000).
- R Martin, T Sham, G Wong Won, K Jones, H Feng. Synchrotron X-ray Fluorescence and Secondary Ion Mass Spectroscopy In Tree Ring Microanalysis: Applications to Dendroanalysis. *X-Ray Spectrom.* **30**, 338-341 (2001).
- A Mottana, A Marcelli, G Cibir, M Dyar. X-ray absorption spectroscopy of micas. *Advances in Micas*, p. 371-412, Mineralogical Society of America, Washington. (2002).
- S Naftel, R Martin, K Jones, H Feng, M Savard, C Begin. Synchrotron Radiation Analysis of a Smelter Impacted Tree Ring Sample. *Can. J. Anal. Sci. Spectros.* **46** (4), 118-122 (2001).
- J Rakovan. The role of crystal surface structure during growth: Trace element incorporation and epitaxy. Ph.D. Thesis. SUNY Stony Brook, Stony Brook. (1996).
- K Richter, M Dyar, J Delaney, T Vennemann, R Hervig. Distribution of OH, O, CL, and F in biotite from volcanic rocks and correlations with octahedral cations. *Am. Mineral.* **87** (1), 142-153 (2002).
- C Tegner, J Delaney, M Dyar. Ferric/ferrous iron in plagioclase of the Skaergaard intrusion. *EOS.* **82** (47), V32E-1037 (2001).
- J Therkelsen, M Dyar, J Delaney, J Johnson, F Horz. Effects of shock on ferric iron and major elements in plagioclase, pyroxene, and olivine: First reconnaissance. *Lunar and Planetary Science Conference*, Vol 33, p. 1696, sponsored by Lunar and Planetary Institute. (2002).
- J Therkelsen. Shock-induced changes in redox state of experimentally shocked plagioclase, pyroxene, and olivine. B.A. Thesis. Amherst College, Amherst. (2000).
- J Therkelsen, M Dyar, J Delaney. Geologic and Temporal Constraints on the Martian Dichotomy using Outflow Channels. *Lunar and Planetary Science Conference*, Vol 33, p. 1696, sponsored by Lunar and Planetary Institute. (2002).
- D Vaniman, S Chipera, D Bish, M Duff, D Hunter. Crystal chemistry of clay-Mn oxide associations in soils, fractures, and matrix of the Bandelier Tuff, Pajarito Mesa, New Mexico. *Geochim. Cosmochim. Acta.* **66** (8), 1349-1374 (2002).
- D Vanko, M Bonnin-Mosbah, P Philippot, E Rodder, S Sutton. Fluid inclusion in quartz from oceanic hydrothermal specimens and the Bingham, Utah, porphyry-Cu deposit: a study with PIXE and SXRF. *Chem. Geol.* **173** (1-3), 227-238 (2001).
- M Vasquez, G Halada, C Clayton. The application of synchrotron-based spectroscopic techniques to the study of chromate conversion coatings. *Electrochim. Acta.* **47**, 3105-3115 (2002).
- D Xirouchakis, D Draper, C Schwandt, A Lanzirrotti. Crystallization conditions of Los Angeles, a basaltic Martian meteorite. *Geochim. Cosmochim. Acta.* **66**, 181-194 (2002).

#### Beamline X26C

- E Enemark, A Stenlund, L Joshua-Tor. Crystal structures of two intermediates in the assembly of the papillomavirus replication initiation complex. *EMBO J.* **21** (6), 1487-1496 (2002).

- R Gilboa, D Zharkov, G Golan, A Fernandes, S Gerchman, E Matz, J Kycia, A Grollman, G Shoham. Structure of formamidopyrimidine-DNA glycosylase covalently complexed to DNA. *J. Biol. Chem.* **277**, 19811-6 (2002).
- B Hall, D Bar-Sagi, N Nassar. The Structural basis for the transition from Ras.GTP to Ras.GDP. *Proc Natl Acad Sci USA*. **99** (19), 12138 (2002).
- I Hayashi, K Vuori, R Liddington. The focal adhesion targeting (FAT) domain of focal adhesion kinase is a four-helix bundle that binds paxillin. *Nat. Struct. Biol.* **9** (2), 101-109 (2002).
- T Messick, N Chmiel, M Golinelli, M Langer, L Joshua-Tor, S David. Noncysteinylyl coordination to the [4Fe-4S]<sup>2+</sup> Cluster of the DNA Repair Adenine Glycosylase MutY introduced via Site-Directed Mutagenesis. Structural Characterization of an Unusual Histidinylyl Coordinated Cluster. *Biochemistry*. **41** (12), 3931-3942 (2002).
- J Min, X Zhang, X Cheng, S Grewal, R Xu. Structure of the SET Domain Histone Lysine Methyltransferase Clr4. *Nat. Struct. Biol.* **9** (11), 828 (2002).
- J Truglio, K Theis, S Leimkuhler, R Rappa, K Rajagopalan, C Kisker. Crystal Structures of the Active and Alloxanthine-Inhibited Forms of Xanthine Dehydrogenase from *Rhodobacter capsulatus*. *Structure*. **10** (1), 115-125 (2002).
- D van Aalten, W Crielaard, K Hellingwerf, L Joshua-Tor. Crystal structure of the photoactive yellow protein reconstituted with caffeic acid at 1.16 Å resolution. *Acta Cryst. D*. **58** (4), 585-590 (2002).
- D van Aalten, A Haker, J Hendriks, K Hellingwerf, L Joshua-Tor, W Crielaard. Engineering photocycle dynamics: crystal structures and kinetics of three photoactive yellow protein hinge-binding mutants. *J. Biol. Chem.* **277** (8), 6463-6468 (2002).
- Z Zhang, M Hayashi, O Merkel, B Stillman, R Xu. Structure and Function of the BAH-containing Domain of Orc1p in Epigenetic Silencing. *EMBO J.* **21** (17), 4600-4611 (2002).
- D Zharkov, G Golan, R Gilboa, A Fernandes, S Gerchman, J Kycia, R Reiger, A Grollman, G Shoham. Structural analysis of *Escherichia coli* endonuclease VIII: its covalent reaction intermediate. *EMBO J.* **21**, 789-800 (2002).
- Beamline X27C**
- B Chu. Benjamin Chu. *Macromolecules*. **35** (3), 585-586 (2002).
- M Gelfer, A Waddon, K Schmidt-Rohr, R Gale, L Kleiner, R Bergren. Annealing-induced Increase of Permeability and Amorphous-Phase Mobility in Ethylene-Vinylacetate Copolymer. *J. Polym. Sci., Part B: Polym. Phys.* **39**, 2774-2779 (2002).
- F Grohn, X Gu, G Nisato, H Grull, B Bauer, E Amis. Organization of Hybrid Dendrimer-Inorganic Nanoparticles on Amphiphilic Surfaces. *Macromolecules*. **35**, 4852 (2002).
- F Grohn, B Bauer, E Amis. Quantum Dots in Dendrimer Templates - Small Angle X-ray Scattering Allows to Characterize New Nanoparticles with Promising Properties. NSLS, Brookhaven. Prepared for DOE. (2001).
- F Grohn, B Bauer, E Amis. Hydrophobically Modified Dendrimers as Inverse Micelles: Formation of Cylindrical Multi-Dendrimer Nanostructures. *Macromolecules*. **34**, 6701 (2001).
- F Grohn, G Kim, B Bauer, E Amis. Nanoparticle Formation within Dendrimer-Containing Polymer Networks: Route to new Organic-Inorganic Hybrid Materials. *Macromolecules*. **34**, 2179 (2001).
- J Gu, S Xu, L Yu. A Model of Cross-Bridge Attachment to Actin in the A.M.ATP State Based on X-Ray diffraction from Permeabilized Rabbit Psoas muscle. *Biophys. J.* **82**, 2123-2133 (2002).
- B Hsiao, F Yeh, L Liu. Nanotailored Crystalline Morphology in Hexagonally Perforated Layers of a Self-Assembled PS-b-PEO Diblock Copolymer. *Macromolecules*. **35** (9), 3553-3562 (2002).
- G Kumaraswamy, J Kornfield, F Yeh, B Hsiao. Shear-Enhanced Crystallization in Isotactic Polypropylene. 3. Evidence for a Kinetic Pathway to Nucleation. *Macromolecules*. **35** (5), 1762-1769 (2002).
- Z Liu, S Chattopadhyay, M Shaw. The Structurization and Rheology of Diblock Copolymer/Hydrocarbon Solutions. *The Society of Rheology 74th Annual Meeting*, Vol 74, p. 95, sponsored by The Society of Rheology. (2002).
- R McKiernan, A Heintz, S Hsu, E Atkins, J Penelle, S Gido. Influence of Hydrogen Bonding on the Crystallization Behavior of Semicrystalline Polyurethanes. *Macromolecules*. **35**, 6970-6974 (2002).
- C Park, J McAlvin, C Fraser, E Thomas. Iron Cluster and Microstructure Formation in Metal-Centered Star Block Copolymers: Amphiphilic Iron Tris(bipyridine)-Centered Polyoxazolines. *Chem. Mater.* **14** (3), 1225-1230 (2002).
- S Ran, X Zong, D Fang, B Hsiao, B Chu, P Cuniff, R Phillips. Studies of the mesophase development in polymeric fibers during deformation by synchrotron SAXS/WAXD. *J. Mater. Sci.* **36**, 3071-3077 (2001).
- S Ran, C Burger, D Fang, X Zong, S Cruz, B Chu, B Hsiao, R Bubeck, K Yabuki, et al. In-Situ Synchrotron WAXD/SAXS Studies of Structural Development during PBO/PPA Solution Spinning. *Macromolecules*. **35** (2), 433-439 (2002).
- F Schipper, G Fouldas, S Pispas, N Hadjichristidis, T Pakula. The Phase State of Poly(butadiene-*b*-tert-butyl methacrylate) and Poly(ethylene-*b*-tert-butyl methacrylate) Diblock Copolymers. *Macromolecules*. **35**, 8860-8868 (2002).
- S Toki, I Sics, S Ran, L Liu, B Hsiao, S Murakami, K Senoo, S Kohjiya. New Insights into Structural Development in Natural Rubber During Uniaxial Deformation in situ Synchrotron X-ray Diffraction. *Macromolecules*. **35** (17), 6578 (2002).
- S Xu, J Gu, G Melvin, L Yu. Structural Characterization of Weakly Attached Cross-Bridges in the A.M.ATP State in Permeabilized Rabbit psoas Muscle. *Biophys. J.* **82**, 2111-2122 (2002).
- L Zhu, P Huang, W Chen, Q Ge, R Quirk, S Cheng, E Thomas, B Lotz, B Hsiao, et al. Nanotailored Crystalline Morphology in Hexagonally Perforated Layers of a Self-Assembled PS-*b*-PEO Diblock Copolymer. *Macromolecules*. **35**, 3553-3562 (2002).

Y Zhu, R Weidisch, S Gido, G Velis, N Hadjichristidis. Morphologies and Mechanical Properties of a Series of Block-Double-Graft Copolymers and Terpolymers. *Macromolecules*. **35**, 5903-5909 (2002).

L Zhu, B Mimnaugh, Q Ge, R Quirk, S Cheng, E Thomas, B Lotz, B Hsiao, F Yeh, L Liu. Hard and soft confinement effects on polymer crystallization in microphase separated cylinder-forming PEO-b-PS/PS blends. *Polymer*. **42** (21), 9121 (2001).

### Beamline X28C

M Chance. Unfolding of Apomyoglobin Examined by Synchrotron Footprinting. *Biochem. Biophys. Res. Commun.* **287**, 614-621 (2001).

G Dhavan, D Crothers, M Chance, M Brenowitz. Concerted Binding and Bending of DNA by Eschericia Coli Integration Host Factor . *J. Mol. Biol.* **315**, 1027-1037 (2002).

S Goldsmith, J Guan, S Almo, M Chance. Synchrotron Protein Footprinting: A Technique to Investigate Protein-Protein Interactions. *J. Biomol. Struct. Dyn.* **19**, 405-419 (2001).

J Guan, S Vorobiev, S Almo, M Chance. Mapping the G-Actin Binding Surface of Cofilin Using Synchrotron Protein Footprinting. *Biochemistry*. **41** (18), 5765-5775 (2002).

S Heilman-Miller, J Pan, D Thirumalai, S Woodson. Role of Counterion Condensation in Folding of the Tetrahymena Ribozyme II Counterion-Dependence of Folding Kinetics. *J. Mol. Biol.* **309**, 57-68 (2001).

J Kiselar, S Maleknia, M Sullivan, K Downard, M Chance. Hydroxyl Radical Probe of Protein Surfaces Using Synchrotron X-Ray Radiolysis and Mass Spectrometry. *Int. J. Radiat. Biol.* **78**, 101-114 (2002).

S Maleknia, C Ralston, M Brenowitz, K Downard, M Chance. Determination of Macromolecular Folding and Structure by Synchrotron X-Ray Radiolysis Techniques. *Anal. Biochem.* **289**, 103-115 (2001).

D Thirumalai, N Lee, S Woodson, D Klimov. Early Events in RNA Folding. *Annu. Rev. Phys. Chem.* **52**, 751-762 (2001).

T Uchida, Q He, C Ralston, M Brenowitz, M Chance. Linkage of Monovalent and Divalent Ion Binding in the Folding of the P4-P6 Domain of the Tetrahymena Thermophila Ribozyme. *Biochemistry*. **41**, 5799-5806 (2002).

S Woodson, M Deras, M Brenowitz. Time-Resolved Hydroxyl Radical Footprinting of RNA with X-Rays. *Current Protocols in Nucleic Acid Chemistry* , p. 11.6.1-11.6.23, John Wiley Sons, New York.