



PUBLICATIONS

The following pages list all papers published in the 2004 calendar year as reported to the NSLS by February 28, 2005. Citations are listed in order of beamline number and then alphabetically by the last name of the first author. This list contains reported citations for journal articles, published conference proceedings, books, chapters in books, formal reports, informal reports, technical reports, theses, dissertations, and patents. 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.

The first column in the table below lists the number of publications reported to the NSLS during the 2004 fiscal year (Oct. 1, 2003 – Sept. 30, 2004) and published between 2001 and 2004. Although some of these publications were published earlier than FY 2004, they were not reported to the NSLS until this fiscal year. Thus, they have not been counted in prior years' activity reports.

The second column in the table below lists the number of publications published in the 2004 calendar year and reported to the NSLS as of Feb. 28, 2005. These numbers are slightly lower than the fiscal year values because they contain only publications from 2004 and it often takes many months or years to account for user and staff publications.

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of journal articles are reported in this list, including premier journals, peer-reviewed journals, and a few that are not peer-reviewed.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

	Reported in Fiscal Year 2004*	Published in Calendar Year 2004**
Journals, peer-reviewed, premier	100	102
Journals, other peer-reviewed	506	487
Journals, non peer-reviewed	35	28
Total Journals and Magazines	641	617
Books/Chapters in Books	4	4
Published Conference Proceedings	40	40
Reports: Technical, Formal, Informal	3	3
Theses/Dissertations	15	15
Patents	0	0
Total Misc. Publications	62	62
Total Publications	734	679
NSLS VUV User Publications	71	57
NSLS X-Ray User Publications	549	537
NSLS Staff Publications	114	85
	734	679

* Publications reported to the NSLS from Oct 1, 2003 – Sept. 30, 2004 and published between 2001 – 2004.

** Publications published in 2004 as reported to the NSLS by Feb. 28, 2005.

NSLS Users

Beamline U1A

- H Hwu, B Fruhberger, J Chen. Different Modification Effects of Carbide and Graphitic Carbon on Ni Surfaces. *J. Catal.* **221** (1), 170-177 (2004).
- J McCormick, B Zhao, S Rykov, H Wang, J Chen. Thermal Stability of Flame-Synthesized Anatase TiO₂ Nanoparticles. *J. Phys. Chem. B.* **108**, 17398-17402 (2004).
- S Xiao, S Brunner, M Wieland. Reactions of Surface Amines with Heterobifunctional Cross-Liners Bearing Both Succinimidyl Ester and Maleimide for Grafting Biomolecules. *J. Phys. Chem. B.* **108**, 16508-16517 (2004).
- M Zellner, J Chen. Synthesis, Characterization and Surface Reactivity of Tungsten Carbide (WC) PVD Films. *Surf. Sci.* **569**, 89-98 (2004).

Beamline U2A

- D Klug, J Tse, Z Liu, X Gonze, R Hemley. Anomalous Transformations in Ice VIII. *Phys. Rev. B.* **70**, 144113 (2004).
- J Kung, B Li, T Uchida, Y Wang, D Neuville, R Liebermann. In Situ Measurements of Sound Velocities and Densities Across the Orthopyroxene-High-Pressure Clinopyroxene Transition in MgSiO₃ at High Pressure. *Phys. Earth Planet. Interiors.* **147**, 27-44 (2004).
- H Liu, J Hu, J Xu, Z Liu, J Shu, H Mao, J Chen. Phase Transition and Compression Behavior of Gibbsite under High-Pressure. *Phys. Chem. Miner.* **31**, 240-246 (2004).
- C Siebodnick, J Zhao, R Angel, B Hanson, Y Song, Z Liu, R Hemley. High Pressure Study of Ru₃(CO)₁₂ by X-ray Diffraction, Raman, and Infrared Spectroscopy. *Inorg. Chem.* **43** (17), 5245-5252 (2004).
- D Wetzel. Recent Analytical Synchrotron Infrared Microspectroscopy and Imaging. *Microsc. Microanal.* **10** (suppl 2), 1354-1355 (2004).

Beamline U2B

- E Chouparova, A Lanzirrotti, H Feng, K Jones, N Marinkovic, C Whitson, P Philp. Characterization of Petroleum Deposits Formed in a Producing Well by Synchrotron Radiation-Based Microanalyses. *Energ. Fuel.* **18** (4), 1199-1212 (2004).
- S Lappi, S Franzen. Eigenvector Mapping: A Method for Discerning Solvent Effects on Vibrational Spectra. *Spectrochim. Acta A.* **60**, 357-370 (2004).
- D Wetzel, J Striova, D Huggins, M Collinson. Synchrotron Infrared Microspectroscopy Reveals Localized Heterogeneities in an Organically Modified Silicate Film. *Vib. Spectrosc.* **35** (1-2), 153-158 (2004).
- P Yu, J McKinnon, C Christensen, D Christensen. Applications of Synchrotron Technology (SR-FTIR) to Feed Analysis and Utilization: A Novel Approach. *Proceeding of the 25th Western Nutrition Conference - Nutrient Requirement and Ingredient Evaluation in 21st Century*, Vol Sept 28-30, p. 98-112, sponsored by University of Saskatchewan. (2004).
- P Yu, J McKinnon, C Christensen, D Christensen. Using Synchrotron Transmission FTIR Microspectroscopy as a Rapid, Direct and Nondestructive Analytical Technique to Reveal Molecular Microstructural-Chemical Features within Tissue in Grain Barley. *J. Agr. Food Chem.* **52**, 1484-1494 (2004).
- P Yu, J McKinnon, C Christensen, D Christensen. Using Synchrotron-Based FTIR Microspectroscopy to Reveal Chemical Features of Feather Protein Secondary Structure: Comparison with Othe Feed Protein Sources. *J. Agr. Food Chem.* **52**, 7353-7361 (2004).
- Yu, J McKinnon, C Christensen, D Christensen. Imaging Molecular Chemistry of Pioneer Corn. *J. Agr. Food Chem.* **52**, 7345-7352 (2004).
- P Yu. Application of Advanced Synchrotron-Based Fourier Transform Infrared Microspectroscopy (SR-FTI) to Animal Nutrition and Feed Sciences: A Novel Approach. *Brit. J. Nutr.* **92**, 869-885 (2004).
- P Yu, J McKinnon, C Christensen, D Christensen, N Marinkovic. Chemical Imaging of Microstructures of Plant Tissues within Cellular Dimension using Synchrotron Infrared Microspectroscopy. *J. Agr. Food Chem.* **51**, 6062-6067 (2004).

Beamline U4A

- A Chan, W Chen, H Wang, J Rowe, T Madey. Methanol Reactions Over Oxygen-Modified Re Surfaces: Influence of Surface Structure and Oxidation. *J. Phys. Chem. B.* **108**, 14643-14651 (2004).
- L Fleming, M Ulrich, K Efimenko, J Genzer, A Chan, T Madey, S Oh, O Zhou, J Rowe. NEXAFS and UPS Studies of Aligned Single-walled Carbon Nanotubes on Si(100). *J. Vac. Sci. Technol., B.* **22** (4), 2000-2005 (2004).
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Beamline U4B

- J Holroyd, Y Idzerda, S Stadler. Properties of thin film europium oxide by x-ray magnetic circular dichroism. *J. Appl. Phys.* **95** (11), 6571 (2004).
- A Lussier, J Dvorak, Y Idzerda, S Ogale, S Shinde, T Venkatesan. Comparative X-ray Absorption Spectroscopy Study of Co-Doped SnO₂ and TiO₂. *J. Appl. Phys.* **95** (11), 7190-7191 (2004).
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P Wu, G Saraf, Y Lu, D Hill, R Bartinski, D Arena, R Mee-Yi, A Raley, K Yung. Ion-Beam-Induced Sharpening of ZnO Nanotips. *Appl. Phys. Lett.* **85**, 1247 (2004).

Beamline U4IR

L Keller, S Messenger, G Flynn, S Clemett, S Wirick, C Jacobsen. The Nature of Molecular Cloud Material in Interplanetary Dust. *Geochim. Cosmochim. Acta.* **68** (11), 2577-2589 (2004).

Beamline U5UA

H Jeong, R Skomski, C Waldfried, T Komesu, P Dowben, E Vescovo. The Effective Spin Dependent Debye Temperature of Gd(0001). *Phys. Lett. A.* **324**, 242 (2004).

Beamline U7A

- L Andruzzi, A Hexemer, X Li, C Ober, E Kramer, G Galli, E Chiellini, D Fischer. Control of Surface Properties Using Fluorinated Polymer Brushes Produced by Surface-Initiated Controlled Radical Polymerization. *Langmuir.* **20**, 10498-10506 (2004).
- S Banerjee, T Hemraj-Benny, M Balasubramanian, D Fischer, J Misewich, S Wong. Ozonized Single-Walled Carbon Nanotubes Investigated using NEXAFS Spectroscopy. *Chem. Commun.* **7** (7), 772-773 (2004).
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- D Burnett, A Capitano, A Gabelnick, A Marsh, D Fischer, J Gland. In-situ Soft X-ray Studies of CO Oxidation on the Pt(111) Surface. *Surf. Sci.* **564**, 29-37 (2004).
- D Burnett, A Gabelnick, A Marsh, D Fischer, J Gland. Comparisons of Propylene and Propyne Catalytic Oxidation on a 100 Å Pt/Al₂O₃ Thin Film using in situ Soft X-ray Fluorescence Methods. *Surf. Sci.* **553**, 1-12 (2004).
- D Burnett, A Gabelnick, A Marsh, H Lewis, S Yaliso, D Fischer, J Gland. Defect Enhanced Carbon Monoxide Oxidation at Elevated Oxygen Pressures on a Pt/Al₂O₃. *J. Phys. Chem. B.* **108**, 5314-5323 (2004).
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- E Jablonski, V Prabhu, S Sambasivan, D Fischer, E Lin, D Goldfarb, M Angelopoulos, H Ito. Surface and bulk chemistry of chemically amplified photoresists. *Advances in Resist Technology and Processing*, Vol XXI, p. 31, sponsored by SPIE. (2004).
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- A Marsh, D Burnett, D Fischer, J Gland. In-Situ Soft X-ray Studies of Toluene Catalytic Oxidation on the Pt(111) Surface. *J. Phys. Chem. B.* **108**, 605-611 (2004).

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- W Yoon, C Grey, M Balasubramanian, X Yang, D Fischer, J McBreen. A Combined NMR and XAS Study on the Local Environments and Electronic Structures of the Electrochemically Li-ion deintercalated LiCo₁/3Ni₁/3Mn₁/3O₂ electrode System. *J. Electrochem. Soc.* **7** (3), A53 (2004).
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Beamline U7B

- M Fernandez-Garcia, A Martinez-Arias, J Hanson, J Rodriguez. Nanostructured Oxides in Chemistry: Characterization and Properties. *Chem. Rev.* **104** (9), 4063-4104 (2004).

Beamline U8B

- T Owens, B Ludwig, K Schneider, D Fossnacht, B Orr, M Banaszak Holl. Oxidation of Alkylsilane-Based Monolayers on Gold. *Langmuir*. **20** (22), 9636-9645 (2004).
- T Owens, B Ludwig, D Fossnacht, J Bartolin, N Homann, N Wells, B Orr, M Banaszak Holl. Octylgermane on Gold: Synthesis, Oxidation, and Pattern Formation. *Langmuir*. **20**, 11422-11427 (2004).
- T Owens. Formation and Reactivity of Alkylsilane-Based Monolayers on Gold. Ph.D. Thesis. University of Michigan, Ann Arbor. (2004).

Beamline U9B

- J Lees, B Smith, F Wien, A Miles, B Wallace. CDtool - an Integrated Software Package for Circular Dichroism Spectroscopic Data Processing, Analysis, and Archiving. *Anal. Biochem.* **332**, 285-289 (2004).

Beamline U10A

- C Homes, S Dordevic, M Strongin, D Bonn, R Liang, W Hardy, S Komiya, Y Ando, G Yu, et al.. A Universal Scaling Relation in High-Temperature Superconductors. *Nature*. **430**, 539-541 (2004).
- A Zimmers, N Bontemps, R Lobo, C Hill, M Barr, R Greene, C Homes, A Millis. Infrared Signature of the Superconducting State in Pr(2-x)Ce(x)CuO(4). *Phys. Rev. B*. **70**, 132502 (2004).

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- D Chidambaram, G Halada, C Clayton. Synchrotron Radiation Based Grazing Angle Infrared Spectroscopy of Chromate Conversion Coatings Formed on Aluminum Alloys. *J. Electrochem. Soc.* **151** (3), B160 (2004).
- M Diem, M Romeo, C Matthaus, M Miljkovic, L Miller, P Lasch. Comparison of Fourier Transform Infrared (FTIR) Spectra of Individual Cells Acquired using Synchrotron and Conventional Sources. *Infrared Phys. Technol.* **45**, 331-338 (2004).
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- J Kneipp, L Miller, S Spassov, F Sokolowski, P Lasch, M Beekes, D Naumann. Scrapie-infected Cells, Isolated Prions, and Recombinant Prion Protein: A Comparative Study. *Biopolymers*. **74** (1-2), 163-7 (2004).
- L Miller, J Tetenbaum Novatt, D Hamerman, C Carlson. Alterations in Mineral Composition Observed in Osteoarthritic Joints of Cynomolgus Monkeys. *Bone*. **35** (2), 498-506 (2004).
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- P Yu. Application of Advanced Synchrotron-Based Fourier Transform Infrared Microspectroscopy (SR-FTI) to Animal Nutrition and Feed Sciences: A Novel Approach. *Brit. J. Nutr.* **92**, 869-885 (2004).

Beamline U12A

- S Lincic, H Piao, K Adib, M Barteau. Ethylene Epoxidation on Ag: Identification of the Crucial Surface Intermediate by Experimental and Theoretical Investigation of its Electronic Structure. *Angew. Chem. Int. Ed.* **43** (22), 2918-2921 (2004).
- D Mullins. Adsorption of CO and C₂H₄ on Rh-Loaded Thin-Film Praseodymium Oxide. *Surf. Sci.* **556** (2-3), 159-170 (2004).
- H Piao, K Adib, M Barteau. A Temperature-Programmed X-ray Photoelectron Spectroscopy (TPXPS) Study of Chlorine Adsorption and Diffusion on Ag(111). *Surf. Sci.* **557** (1-3), 13-20 (2004).

Beamline U12IR

- L Mihaly, D Talbayev, L Kiss, J Zhou, T Feher, A Janossy. Field-frequency Mapping of the Electron Spin Resonance in the Paramagnetic and Antiferromagnetic States of LaMnO₃. *Phys. Rev. B*. **69**, 024414 (2004).
- D Talbayev, L Mihaly, J Zhou. Antiferromagnetic Resonance in LaMnO₃ at Low Temperature. *Phys. Rev. Lett.* **93** (1), 017202-1 (2004).

Beamline U13UB

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Beamline X1A1

- T Beetz. Soft X-ray Diffraction Imaging With and Without Lenses and Radiation Damage Studies. Ph.D. Thesis. SUNY at Stony Brook, Stony Brook. (2004).
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- G Flynn, L Keller, C Jacobsen, S Wirick. The Origin of Organic Matter in the Solar System: Evidence from the Interplanetary Dust Particles. *Bioastronomy 2002: Life Among the Stars*, Vol 213, p. 275-280, sponsored by International Astronomical Union. (2004).
- H Geckeis, T Schäfer, W Hauser, T Rabung, T Missana, C Degueldre, A Möri, J Eikenberg, T Fierz, W Alexander. Results of the Colloid and Radionuclide Retention Experiment (CRR) at the Grimsel Test Site (GTS), Switzerland - Impact of Reaction Kinetics and Speciation on Radionuclide Migration. *Radiochim. Acta*. **92**, 765-774 (2004).
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- L Keller, S Messenger, G Flynn, S Clemett, S Wirick. The Nature of Molecular Cloud Material in Interplanetary Dust. *Geochim. Cosmochim. Acta*. **68** (11), 2571-2589 (2004).
- M Lerotic, C Jacobsen, T Schaefer, S Vogt. Cluster Analysis of soft X-ray spectromicroscopy Data. *Ultramicroscopy*. **100**, 35-57 (2004).
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- M Plaschke, J Rothe, M Denecke. Characterization of Gorbelen groundwater colloids by scanning transmission X-ray microscope. *Prog. Coll. Pol. Sci. S.* **126**, 130-133 (2004).
- J Rothe, M Plaschke, M Denecke. Scanning Transmission X-ray Microscopy as Speciation Tool for Natural Organic Molecules. *Radiochim. Acta*. **92**, 711-715 (2004).
- T Yoon, S Johnson, K Benzerara, C Doyle, T Tylliszczak, D Shuh, G Brown, Jr.. In Situ Characterization of Aluminum-Containing Mineral-Microorganism Aqueous Suspensions using Scanning Transmission x-Ray Microscopy. *Langmuir*. **20**, 10361-10366 (2004).

Beamline X1A2

- M Lerotic, C Jacobsen, T Schaefer, S Vogt. Cluster Analysis of soft X-ray spectromicroscopy Data. *Ultramicroscopy*. **100**, 35-57 (2004).
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Beamline X1B

- P Abbamonte, G Blumberg, A Rusydi, A Gozar, P Evans, T Siegrist, L Venema, H Elsaki, E Isaacs, G Sawatzky. Crystallization of Charge Holes in The Spin Ladder of Sr14Cu24O41. *Nature*. **431**, 1078 (2004).
- J Downes, C McGuinness, P Glans, T Learmonth, D Fu, P Sheridan, K Smith. Electronic Structure Near the Fermi Level of the Organic Semiconductor Copper Phthalocyanine. *Chem. Phys. Lett.* **390**, 203-207 (2004).
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Beamline X3A1

- K Fiese, M Panthofer, G Wu, M Jansen. Strategies for the Structure Determination of Endohedral Fullerenes Applied to the Example of Ba@C74.Co(octaethylpopyrin).2C6H6. *Acta Cryst. B*. **60**, 520-527 (2004).
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- A Reich, M Panthofer, H Modrow, U Wedig, M Jansen. The Structure of Ba@C74. *J. Am. Chem. Soc.* **126**, 14428-14434 (2004).

Beamline X3A2

- A Nogales, G Broza, Z Roslaniec, K Schulte, I Sics, B Hsiao, A Sanz, M Garcia-Gutierrez, D Rueda, et al.. Low Percolation Threshold in Nanocomposites Based on Oxidized Single Wall Carbon Nanotubes and Poly(butylene terephthalate). *Macromolecules*. **37**, 7669-7672 (2004).
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- L Yang, R Somani, I Sics, B Hsiao, R Kolb, H Fruitwala, C Ong. Shear-Induced Crystallization Precursor Studies in Model Polyethylene Blends by In-Situ Rheo-SAXS and Reho-WAXD. *Macromolecules*. **37**, 4845-4859 (2004).
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Beamline X3B1

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