



**Fifth International Conference on
Synchrotron Radiation in Materials Science**

SRMS-5 Conference Contributions

Table of Contents and Program

Introduction

Welcome to the 5th International Conference on Synchrotron Radiation in Materials Science (SRMS-5). This conference, the latest in a series of international conferences that are held every two years, takes place at the Drake Hotel in Chicago from July 30 – August 2, 2006. It brings together leading edge researchers from around the world and is a celebration of the strong and increasingly important relationship between materials science and synchrotron radiation research.

SRMS-5 takes place at a time when a large proportion of the scientific research at synchrotron user facilities is in materials science and condensed matter physics. Further, with the rapid increase in interest in membranes, biomaterials and nanostructured materials, this fraction can only be expected to grow. It is noteworthy that among the research papers published during 2005 in the highly cited journals *Nature* and *Science*, 19% and 27% reported on materials research, and of these more than 25% made use of synchrotron radiation. The aim of SRMS-5 is to highlight recent breakthroughs in materials science using synchrotron radiation, and to open doors to future innovation and discovery.

The main organizer of SRMS-5 is the Advanced Photon Source at Argonne National Laboratory, with a local organizing committee that includes Northwestern University, the University of Chicago, the Illinois Institute of Technology, Iowa State University and the University of Illinois at Urbana-Champaign. Professor Neville Greaves, University of Wales (UK), chairs the international advisory committee. Sponsors and endorsement for SRMS-5 come from Northwestern University, the University of Illinois at Urbana-Champaign and at Chicago, the Illinois Institute of Technology, the National Science Foundation and the University of Chicago. Corporate sponsors are Blake Industries, Mar USA and Advanced Design Consulting.

The main topical areas of the conference are polymers and biomaterials, thin films, electronic materials, surfaces and interfaces, magnetism, superconductivity, glasses and ceramics, engineering materials, nanostructured materials and self assembly, high-pressure materials science and materials under extreme conditions, archeological materials, catalysis and clusters, quantum dots and wires, complex oxides, and innovative instrumentation. With research in many of these areas advancing rapidly, this volume was created to bridge the gap between a conference program and a conference proceedings appearing six months to a year after the event. Thanks to the extraordinary support of the presenters at SRMS-5, this volume includes the locally refereed conference contributions for nearly 90% of the presentations. This enables conference attendees to make immediate use of the latest information in areas highlighted at the conference. There are 35 plenary and invited talks, 37 contributed talks and 134 poster presentations. Full color versions of the conference contributions can be viewed and downloaded from the table below.

We acknowledge the Office of Science in the U.S. Department of Energy and other U.S. agencies, as well as many governments abroad for their encouragement and support of materials research at synchrotron radiation facilities around the world. We also acknowledge the positive influence of earlier SRMS conferences, and in particular SRMS-IV, in developing the format of SRMS-5. Many thanks to the many active members of the international advisory committee and to the local organizing committee, and in particular Tracey Stancik as conference secretary, Al Macrander and Dean Haeffner as lead editor and co-editor of this volume, and John Quintana and George Srajer, for their many efforts and contributions to the success of this conference and the preparation of this volume.

Gabrielle Long
Chair, Local Organizing Committee

Al Macrander
Lead Editor

Dean Haeffner
Co-Editor

Barb Dalton
Web Conference Contributions Secretary

Monday, July 31
Plenary Session
Angle Resolved Photoemission and Its Contribution to Our Understanding of the High Temperature Superconductors (pdf) - <i>J.C. Campuzano, U. Chatterjee, M. Shi, A.A. Kanigel, M.R. Norman, M. Randeria, Kaminski, H.M. Fretwell, T. Takahashi, S. Rosenkranz, Z.Z. Li, H. Raffy, A. Santander-Syro, K. Kadowaki</i>
Phase Transitions and Fluctuations in Nanoconfined Systems: Recent Insights from Synchrotron Radiation Studies (pdf) - <i>H. Dosch</i>
Structure and Dynamics of Nanoparticle Assembly at Fluid Interfaces - <i>T.P. Russell</i>

Magnetic Reversal and Domain Structure in Perpendicular Antiferromagnetically Coupled Films ([pdf](#)) - *E.E. Fullerton, O. Hellwig, A. Berger, J.B. Kortright*

Magnetism

The Role of Planar and Vertical Domain Walls and Uncompensated Interface Spins in Exchange Bias (NA) - *A. Scholl*

Nanoskins on Layered Manganites ([pdf](#)) - *J.W. Freeland, K.E. Gray, J.J. Kavich, J.F. Mitchell*

XMCD Studies of Uranium/Iron Multilayers ([pdf](#)) - *F. Wilhelm, N. Jaouen, A. Rogalev, W.G. Stirling, A.M. Beesley, S.D. Brown, M.F. Thomas, G.H. Lander, S. Langridge, R.C.C. Ward, M.R. Wells, R. Springell, S.W. Zochowski*

Interplay Between Structure and Magnetism in Magneto-caloric Material $Gd_5(Si_xGe_{1-x})_4$ ([pdf](#)) - *D. Haskel, Z. Islam, J. Lang, G. Srajer, Ya. Mudryk, D.L. Schlagel, T.A. Lograsso, K.A. Gschneidner Jr., V.K. Pecharsky*

Liquids and Gasses

Investigating the Mechanism for Liquid-Liquid Transitions in the System $Y_2O_3-Al_2O_3$ by X-ray Diffraction and Small Angle X-ray Scattering ([pdf](#)) - *M.C. Wilding, G.N. Greaves, C.J. Benmore, J.K.R. Weber*

Investigations of High Temperature Liquid Oxides with Synchrotron Radiation ([pdf](#)) - *L. Hennet, I. Pozdnyakova, G.N. Greaves, S. Krishnan, M. Wilding, S. Fearn, O. Majerus, C. Martin, D.L. Price*

Local Structures in Supercritical Solutions: An In Situ Investigation by X-ray Synchrotron Radiation ([pdf](#)) - *C. Da Silva, O. Proux, D. Testemale, J.-L. Hazemann*

Strain Measurements in Metallic Glasses and in Metallic-Glass-Matrix Composites by X-ray Scattering ([pdf](#)) - *T.C. Hufnagel, R.T. Ott, J. Almer*

Engineering Materials I

Micromechanics of Materials using High Energy XRD (NA) - *E. Üstündağ*

Real Time Observation of Dendritic Solidification in Real Alloys by Synchrotron Microradiography ([pdf](#)) - *B. Li, H.D. Brody, A. Kazimirov, D.R. Black, H.E. Burdette, C. Rau*

High-energy Synchrotron X-ray Diffraction and Imaging of Ancient Chinese Bronzes ([pdf](#)) - *M.L. Young, F. Casadio, S. Schnepf, J. Almer, D.R. Haeffner, D.C. Dunand*

Nondestructive Residual Stress Distribution Measurement in Nanostructured Ultrahigh-Strength Gear Steels ([pdf](#)) - *Y. Qian, J. Almer, U. Lienert, B. Tiemens, G.B. Olson*

Films, Surfaces, and Multilayers

In Situ X-ray Studies of Ferroelectricity in Ultrathin Perovskite Films ([pdf](#)) - *G.B. Stephenson, D.D. Fong, S.K. Streiffer, R.-V. Wang, F. Jiang, C. Thompson, J.A. Eastman, P.H. Fuoss*

Synchrotron-based Surface Science to Probe Polymeric Interfacial Regions ([pdf](#)) - *J.L. Lenhart, D.A. Fischer*

Ion Distributions at Charged Aqueous Surfaces by Near Edge X-ray Spectra ([pdf](#)) - *W. Bu, D. Vaknin, P.J. Ryan, A. Travesset*

Time-resolved Synchrotron X-ray Microdiffraction for Studying Ferroelectric and Multiferroic Thin Films ([pdf](#)) - *A. Grigoriev, D.-H. Do, D.M. Kim, C.-B. Eom, B.W. Adams, E.M. Dufresne, P.G. Evans*

Chemistry and Local Structure

Oxidation and Reactivity of Ru-based Model Catalysts: Synchrotron Radiation Studies ([pdf](#)) - *H. Over*

Behavior of Rh Catalysts during NO Reduction by CO with Time Resolved EXAFS and FTIR ([pdf](#)) - *J. Evans, A.J. Dent, S.G. Fiddy, B. Jyoti, M.A. Newton, M. Tromp*

Strain Induced Ferroelectric Distortion in SrTiO₃ Thin Films on Si: Experiment and Theory ([pdf](#)) - *J.C. Woicik, E.L. Shirley, D.A. Fischer, S. Sambasivan, C.R. Ashman, C.S. Hellberg, P. Zschack, E. Karapetrova, P. Ryan, H. Li*

Materials Analysis using Photon-in Photon-out Spectroscopy ([pdf](#)) - *T.K. Sham, P.-S.G. Kim, S. Lam, X.T. Zhou, R.A. Rosenberg, G.K. Shenoy, F. Heigl, A. Jürgensen, T. Regier, I. Coulthard, L. Zuin, Y.-F. Hu*

High Pressure I

Core-Mantle Interaction - The Formation, Elasticity, Rheology, and Dynamics of Iron-Rich Silicate in Earth's D" Layer ([pdf](#)) - *W.L. Mao, H.K. Mao, J. Shu, Y. Fei, R.J. Hemley, Y. Meng, G. Shen, V.B. Prakapenka, D.L. Heinz, A.J. Campbell, W. Sturhahn, J. Zhao*

Pt 5d Magnetic States in Ordered Fe-Pt Alloy under High Pressure Probed by Pt L_{2,3}-edges XMCD ([pdf](#)) - *N. Ishimatsu, M. Yamada, H. Maruyama, N. Kawamura, M. Suzuki*

High-Pressure Induced Structural Phase Transition in Li₂CuO₂ ([pdf](#)) - *S.J. You, F.Y. Li, L.X. Yang, Y. Yu, L.C. Chen, C.Q. Jin, Y.C. Li, X.D. Li, J. Liu*

Combined ADXRD, XANES, and *ab-initio* Study of Scintillating Materials under High Pressure ([pdf](#)) - *D. Errandonea, J. Pellicer-Porres, F.J. Manjón, A. Segura, Ch. Ferrer-Roca, R.S. Kumar, O. Tschäuner, P. Rodríguez-Hernández, J. López-Solano, S. Radescu, A. Mújica, A. Muñoz, G. Aquilanti*

Tuesday, August 1

Plenary Session

High-Pressure Materials Research Using Advanced Third-Generation Synchrotron X-ray ([pdf](#)), *C.-S. Yoo, V. Iota, J. Park, G. Lee, W. Evans, Z. Jenei, H. Cynn*

Supramolecular Assembly of Biological Molecules: From Microtubule Bundles and Necklaces to Bio-nanotubules for Biomedical Applications (NA) - *C.R. Safinya*

Orbital Ordering in Calcium Ruthenates ([pdf](#)) - *C. Nelson*

Synchrotron Methods for Food Science (NA) - *K. de Kruijff*

Nanomaterials and Nanostructures

Probing the Self-Assembly of Nanostructures in Action: Real-Time Grazing-incidence Small-angle X-ray Scattering (NA) - *J. Wang*

Instability and Fluctuations of Metallic Atomic Wires on Si Surfaces ([pdf](#)) - *H.W. Yeom*

Polychromatic Microbeam Diffraction Characterization of Individual ZnO Nanostructures ([pdf](#)) - *J.D. Budai, W. Yang, W. Liu, J.Z. Tischler, Z. Pan, Y.W. Heo, D.P. Norton, B.C. Larson, G.E. Ice*

Combined Crystallographic Methods for the *ab-initio* Solution of the Nanostructure Problem (NA) - *S.J.L. Billinge*

Photomaterials

Synchrotron XRF Determination of Element Distribution in Fossilized Sauropod Bones ([pdf](#)) - *A.R. Pyzalla, N. Zoeger, C. Strelt, P. Wobrauschek, R. Simon, P.M. Sander, E. Chinea-Cano*

In-situ XRD to Investigate Footprints of Plastic Deformation ([pdf](#)) - *H. Van Swygenhoven, S. Van Petegem, B. Schmitt, P.M. Derlet, S. Brandstetter, Z. Budrovic, R. Maass*

A Study of Lamellar Copper Oxides Using the Resonant Inelastic X-ray Scattering (RIXS) Technique ([pdf](#)) - *J.N. Hancock, L. Lu, G. Chabot-Couture, O. Vajik, M. Greven, T. Gog, D. Casa, K. Ishii, J. Mizuki*

High Energy Synchrotron Radiation Studies of Tin-Bronze Artifacts from Tell en-Nasbeh, Northern Juday, ca. 1000-586 BCE ([pdf](#)) - *E.S. Friedman, A. Brody, M.L. Young, D. Peterson, S. Mini*

Techniques and Instrumentation

Time-resolved Synchrotron Radiation in Materials Science at the ESRF (NA) - *A. Kvik*

Bragg Reflections from Periodic Multilayers as a Means for the Generation of X-ray Guided Modes ([pdf](#)) - *I. Prudnikov*

New Research Improvements on the CRG-FAME XAS Beamline at ESRF ([pdf](#)) - *O. Proux, V. Nassif, H. Palancher, E. Lahera, A. Prat, A. Braillard, J.-L. Hazeman*

Optics Fabrication and Metrology for Nanofocusing of Hard X-rays ([pdf](#)) - *A.T. Macrander, C. Liu, R. Conley, L. Assoufid, A. Khounsary, J. Qian, C.M. Kewish*

Chemistry and Biology I

Probing the Defect Structure and Chemistry of Environmental Nanoparticles with Micrometer-sized X-ray Beams ([pdf](#)) - *A. Manceau, B. Lanson, M.A. Marcus*

Molecular "Hole Punchers" and their Mechanisms: From Synthetic Antimicrobials to HIV Protein Transduction Domains (NA) - *G. Wong*

Crystal Structure of Pentacene Thin Films (NA) - *M. Toney*

Decompressive Crystallisation from Supercooled Alumin (NA) - *G.N. Greaves, M.C. Wilding, S. Fearn, Q. Vu Van, L. Hennem, I. Pozdnyakova, O. Majerus, R.J. Cernick, C. Martin*

Polymers

The Use of Synchrotron Radiation to Improve Polymer Systems ([pdf](#)) - *J.C.P. Goosens, P.J. Lemstra*

Self-assembly of Multilayer Films of Spherical-domain Diblock Copolymers (NA) - *G.E. Stein, E.J. Kramer, X. Li, J. Wang*

The Controlled Evolution of Polymer Single Crystals ([pdf](#)) - X. Liu, Y. Zhang, D.K. Goswami, J.S. Okasinski, K. Salaita, P. Sun, M.J. Bedzyk, C.A. Mirkin

Structural Analysis of Thin Films of a PS-*b*-PMMA Block Copolymer with Synchrotron Grazing Incidence X-ray Scattering ([pdf](#)) - J. Yoon, S.-Y. Yang, B. Lee, W.-C. Joo, K. Heo, J.K. Kim, M. Ree

High Pressure II

In-situ Photoemission of Cu Oxidation Reduction at Elevated Pressure ([pdf](#)) - R. Schlögl

Quantum Dots under High Pressure: Optical Properties and X-ray Diffraction Analysis ([pdf](#)) - K.K. Zhuravlev

X-ray Diffraction and Spectroscopy at High Pressures: Recent Studies ([pdf](#)) - H. Giefers, C. Gobin, B. Keifer, E. Kim, Y. Lee, M. Nicol, J. Orwig, M. Pravica, O. Tschauer, B. Yulga

Synchrotron X-ray and Mössbauer Spectroscopy of Some Compound Iron Oxides under High-Pressures ([pdf](#)) - I.S. Lyubutin, A.G. Gavriluk, V.V. Struzhkin, M.Y. Hu

Wednesday, August 2

Plenary Session

X-ray Absorption Spectroscopy Above, Below, and at Electrodes ([pdf](#)) - R. O'Malley, B. Abbey, A. Vollmer, H. Weiss, J. Lipp, S. Fiddy, T. Rayment

Phonons in High-Temperature Superconductors by Inelastic X-ray Scattering ([pdf](#)) - A.Q.R. Baron

Application of Green's Function and Molecular Dynamics to Dislocations and Lattice Vibrations in Small Metal Grains and Grain Boundaries ([pdf](#)) - P.M. Derlet, H. Van Swygenhoven

Resonant X-ray Scattering under Extreme Conditions on SmS and CeFe₂ ([pdf](#)) - L. Paolasini, P.P. Deen, S. Wilkins, C. Mazzoli, B. Janousova, N. Kernavanois, D. Braithwaite, G. Lapertot

Strongly Correlated Systems

Bulk-sensitive High-energy Angle-resolved Photoemission Study of Strongly Correlated Electron Systems ([pdf](#)) - A. Sekiyama, M. Yano, H. Fujiwara, Y. Amano, S. Imada, T. Muro, Y. Onuki, S. Suga

Polarons and Polaron Correlations in 40% Doped Bilayer Manganites (NA) - S. N. Ancona

L- and M-edge Resonant Inelastic X-ray Scattering in Transition-Metal Compounds ([pdf](#)) - M. van Veenendaal

Low Temperature Structural Phase Transition in BaCuSi₂O₆ ([pdf](#)) - E.C. Samulon, Z. Islam, S.E. Sebastian, P.B. Brooks, M.K. McCourt Jr., J. Ilavsky, I.R. Fisher

Chemistry and Biology II

Soft X-ray Spectromicroscopy of Polymers and Biomaterials: From Analysis to Synthesis ([pdf](#)) - A.P. Hitchcock, J. Wang, D. Hernández-Cruz, H. Stover, M.-E. Rousseau, M. Pérolet

Structure and Function of Self-assembled Liposome-DNA-Metal Complexes for Gene Delivery ([pdf](#)) - O. Francescangeli, M. Pisani, P. Bruni, C. Marchini, M. Montani, A. Amici

The Structure of Biogenic Crystals: Aragonite and Calcite (NA) - *E. Zolotoyabko, B. Pokroy, A.N. Fitch, P.L. Lee, J.P. Quintana, E.N. Caspi, F. Marin*

Structural Transitions in Ternary Borohydrides: Possible Hydrogen Storage Candidates ([pdf](#)) - *A.L. Cornelius, R.S. Kumar*

Engineering Materials II

Study of Strain and Composition in Semiconductor Nanostructures by X-ray Spectroscopy and Anomalous Diffraction, in Grazing Incidence ([pdf](#)) - *J. Coraux, M.G. Proietti, V. Favre-Nicolin, G. Renaud, B. Daudin, H. Renevier*

2D Mapping of Texture in Human Dental Enamel ([pdf](#)) - *M. Al-Jawad, R. Cywinski, S.H. Kilcoyne, D.J. Wood, R.C. Shore, L. Bouchenoire, A. Steuwer*

Probing the Micro-mechanical Behavior of Bone via High-energy X-rays ([pdf](#)) - *J. Almer, S.R. Stock*

Structural Properties of Levitated Liquid Aluminum-based Alloys ([pdf](#)) - *I. Pozdnyakova, L. Hennet, G. Mathiak, J. Brillo, D. Zanghi, J.-F. Brun, S. Brassamin, A. Bytchkov, V. Cristiglio, E. Véron, G. Matzen, G. Geandier, D. Thiaudière, S.C. Moss, I. Egry, D.L. Price*

Poster Sessions

Monday, July 31

Dichroism Soft X-ray Absorption Spectromicroscopy and Antiferromagnetic Surfaces and Interfaces ([pdf](#)) - *H. Ohldag, A. Scholl, J. Stöhr*

Simultaneous X-ray and Visible Spectroelectrochemistry of TiO₂ Nanocrystalline Films ([pdf](#)) - *D.J. Gosztola, Z. Saponjic, L. Chen, T. Rajh, R. Rey-de-Castro*

Dislocations Arrangements in Shock-Recovered Al Single Crystals from White Beam Diffraction ([pdf](#)) - *R. Barabash, G. Ice, W. Liu, J. Belak, M. Kumar*

High-energy X-ray Measurements of Structural Anisotropy and Excess Free Volume in Homogenously Deformed Metallic Glass ([pdf](#)) - *R.T. Ott, M.J. Kramer, M.F. Besser, D.J. Sordelet*

Structural and Dielectric Studies of Ba_{0.48}Sr_{0.52}TiO₃/LaNiO₃ Artificial Superlattices Prepared by RF Magnetron Sputtering ([pdf](#)) - *H.Y. Lee, H.J. Liu, K.F. Wu, C.H. Lee*

XAFS Studies of Nanocrystals of a Dilute Magnetic Semiconductor Zn_{1-x}Mn_xO ([pdf](#)) - *S. Chattopadhyay, S.D. Kelly, T. Shibata, R. Viswanatha, M. Balasubramanian, S. Stoupin, M. Ali, C.U. Segre, D.D. Sarma*

In-situ X-ray Diffraction of Phase Transformations in Nanostructured Reactive Multilayer Foils ([pdf](#)) - *J.C. Trenkle, L. Koerner, M.W. Tate, S. Gruner, T.P. Weihs, T.C. Hufnagel*

Magnetic Orientation of MnAs/GaAs(001) by Resonant Soft X-Ray Scattering and Magnetic Force Microscopy (NA) - *R. Magalhães-Paniago*

The Origin of Long Range Attraction Between Hydrophobes in Water ([pdf](#)) - *F. Despa, R.S. Berry*

Devitrification Studies in Binary Zr-Pt Systems using High-energy X-ray Diffraction (NA) - *D. Sordelet*

Domain Ordering of a Highly Strained 5 ML SrTiO ₃ Film Grown on Si(001) (pdf) - P. Ryan, J. Woicik, D. Wermeille, J.-W. Kim, H. Li
DAFS Study of Site-specific Local Structure of Mn in Manganese Ferrite Films (pdf) - E. Kravtsov, D. Haskel, A. Cady, A. Yang, C. Vittoria, X. Zuo, V.G. Harris
Polarization-dependent X-ray Absorption Studies of Multiferroic TbMnO ₃ (NA) - J.-M. Lee
Electronic and Orbital Anisotropy of Multiferroic TbMn ₂ O ₅ by Resonant X-ray Emission Spectroscopy and Polarization-dependent X-ray Absorption (NA) - J.-M. Chen
Electromagnetic Metamaterials - Availability and Spectral Coverage of a New Class of Micro/nanofabricated Composite Materials (pdf) - H.O. Moser, B.D.F. Casse, M. Bahou, P.D. Gu, L.K. Jian, J.W. Lee
In-Situ Surface Diffraction: Perovskite Thin Film Growth (pdf) - P.R. Willmott, R. Herger, D. Martoccia, S. Pauli, Ch. Schlepütz, B.D. Patterson
3D Image Analysis and m-Synchrotron-Tomography for Studying Multi-component, Micro-structured Materials Systems (pdf) - A. Rack, L. Helfen, S. Zabler, C. Knabe, M. Stiller, G. Weidemann, H. Riesemeier, J. Goebbels, J. Banhart
High-pressure Synchrotron Radiation Studies of CaCrO ₃ (NA) - Y. W. Long, S.J. You, L.X. Yang, F.Y. Li, R.C. Yu, C.Q. Jin, H.Z. Liu, G.Y. Shen, H.K. Mao
Pressure-induced Structural Evolution of Cu ₃ N (pdf) - J.G. Zhao, S.J. You, L.X. Yang, F.Y. Li, R.C. Yu, C.Q. Jin, H.Z. Liu, G.Y. Shen, H.K. Mao
Synchrotron X-ray Microprobe Analysis of Optical Fibers (pdf) - K.K. Soni, C.W. Ponader, B. Lai, Z. Cai, G. Shenoy
Investigation of Liquid Structure Using Aerodynamic Levitation Melting and Large-Area X-ray Detectors (pdf) - R. Weber, J.E. Rix, J. Kim, C.J. Benmore, Q. Mei, M.C. Wilding
Three-dimensional High-Energy Diffraction Microscopy of Polycrystalline Bulk Materials (pdf) - U. Lienert, J. Almer, B. Jakobsen, W. Pantleon, H. F. Poulsen, D. Hennessy, C. Xiao, R.M. Suter
Analysis of Domain Switching and Elastic Lattice Strain in Ferroelectric Ceramics (pdf) - A. Steuwer, D.A. Hall, P.J. Withers, T. Mori
Inelastic X-ray Scattering Study of Supercooled Liquid and Solid Silicon (pdf) - A. Alatas, A. Said, H. Sinn, E.E. Alp, C. N. Kodituwakku, M.-L. Saboungi, D.L. Price
Investigating the Mechanism for Liquid-liquid Transitions in the System Y ₂ O ₃ -Al ₂ O ₃ by X-ray Diffraction and Small Angle X-ray Scattering (NA) - R. Weber
In-situ Studies of Absorbed Oxygen on Cu(001): On the Path to Oxidation (NA) - D. Fong
Nanoscale Dynamics of Magnetic Domain Walls with X-ray Speckle (pdf) - O.G. Shpyrko, J.M. Logan, Y. Feng, R. Jaramillo, T.F. Rosenbaum, P. Zschack, A.R. Sandy, M. Sprung, G. Aepli, E.D. Isaacs
In-situ X-ray Studies of Ferroelectricity in Ultrathin Perovskite Films (pdf) - F. Jiang, A. Munkholm, S.K. Streiffer, R.-V. Wang, C. Thompson, P.H. Fuoss, G.B. Stephenson
Synchrotron-based, Energy Dispersive X-ray Diffraction Study of TiH ₂ (pdf) - P.E. Kalita, A.L. Cornelius, H.P. Liermann, W. Yang

X-ray Standing Wave Imaging of Atomic Layer Deposited (ALD) Tungsten Monolayers on α -TiO₂ (110) ([pdf](#)) - C.-Y. Kim, J.W. Elam, M.J. Pellin, D.K. Goswami, S.T. Christensen, M.C. Hersam, P.C. Stair, M.J. Bedzyk

In-Situ Synchrotron X-ray Studies of Cu(001) Surface Structure in Elevated Temperature O₂/CH₃O₂H (NA) - J. Eastman

High-Resolution X-ray Studies of Strained Ferroelectric Thin Films (NA) - J. Klug

X-ray Standing Wave Fluorescence for the Analysis of Bacterial Biofilms ([pdf](#)) - C.A. Crot, D.G. Schultz, M. Meron, A. Kilislioglu, P.D. Edirisinghe, K.A. Skinner-Nemec, L. Hanley

Photo-Emission Electron Microscopy Imaging of Magnetic Remanent States in Patterned Multilayers (NA) - V. Novosad, K.S. Buchanan, M. Grimsditch, J. Pearson, S.D. Bader, A. Doran, A. Scholl

Insights into Doped Magnetic Semiconductors from Soft X-ray Spectroscopy ([pdf](#)) - D.J. Keavney, S.H. Cheung, S.T. King, M. Weinert, L. Li

Vortex and Magnetization Reversal Dynamics in Patterned Structures Imaged Using Time-resolved PEEM ([pdf](#)) - D.J. Keavney, X.F. Han, K. Guslienko, R. Divan, S.D. Bader

Nonequilibrium Interlayer Transport from Time Resolved X-ray Surface Diffraction During Pulsed Laser Deposition (NA) - J. Tischler

Electronic Structure of Zn_{1-x}Cu_xO Film Studied by X-ray Absorption and Emission Spectroscopies ([pdf](#)) - J.W. Chiou, H.T. Cao, K.V. Rao, E. Arenholz, C.L. Dong, C.L. Chang, Y.Y. Chen, W.F. Pong, J.-H. Guo

Triangulation Method for Grain Depth Measurement Using Polychromatic Micro-beam Radiation ([pdf](#)) - H. Bale, N. Tamura, J.C. Hanan

Combined Diffraction and Tomography Analyzing Controlled Residual Stress in Solid Freeform Fabrication ([pdf](#)) - J.C. Hanan, H. Bale, J.E. Smay, Y.S. Chu, F. DeCarlo

X-ray Absorption Microscopy and Spectroscopy Study of Ultra-thin Nanocrystalline Diamond Films ([pdf](#)) - D.S. Grierson, A. V. Sumant, A. R. Konicek, M. Abrecht, P.U. P.A. Gilbert, J. E. Butler, T. Feygelson, S. Rotter, R. W. Carpick

Structural Investigation of Epitaxial HfO₂ Films by X-ray Scattering ([pdf](#)) - C.-H. Hsu, Z.K. Yang, P. Chang, M. Hong, J. Kwo, C.-M. Huang, H.-Y. Lee

Structural and Magnetic Transitions in GdFe₃(B)3₄ at High Pressure Using Synchrotron Radiation (NA) - S. Kharlamova

High Pressure Studies and Chemical Bonding Analysis of Rh₃Bi₁₄ and Rh₃Bi₁₂Br₂ Compounds ([pdf](#)) - Q.F. Gu, G. Krauss, W. Steurer, Yu. Grin

Nanoscale Diagnostics of Crystal Surface Layers Displacement with X-ray Standing Wave Technique ([pdf](#)) - E. Sozontov, V. Kohn, A. Kazimirov, J. Zegenhagen

Yielding Strength and Grain Growth of Polycrystalline Metals Under High P-T Conditions (NA) - Y. Zhao

Oriented Assembly of Inorganic Crystals at Soft-Hard Interfaces ([pdf](#)) - S. Kewalramani, J. Kmetko, K. Kim, G. Evmenenko, H. Mo, G. Dommett, P. Dutta

Structural Analysis of SiCOH Low-k Thin Films Prepared by Chemical Vapor Deposition of Organosilane Precursors ([pdf](#)) - *K. Heo, J. Yoon, K.S. Jin, S. Jin, S.-G. Park, S.-W. Rhee, M. Ree*

Temperature Variations in the Reduced Distribution Function of Liquid Metals and Metallic Glasses ([pdf](#)) - *M.J. Kramer*

XAS Study of Thermally Induced Nano-structuring in Metal-doped Carbon Films ([pdf](#)) - *C. Adelhelm, M. Balden, M. Sikora*

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