

List of Publications

Publications Based on Experiments Performed at NSRRC Beamlines

01 A1 SWLS-White X-ray (PRT)

- J. Y. Chen, D. J. Bottjer, E. H. Davidson, S. Q. Dornbos, X. Gao, Y. H. Yang, C. W. Li, G. Li, X. Q. Wang, D. C. Xian, H. J. Wu, Y. K. Hwu, and P. Tafforeau, "Phosphatized Polar Lobe-forming Embryos from the Precambrian of Southwest China", SCIENCE **312**, 1644 (2006).
- C. C. Kim, C. Wang, Y. C. Yang, Y. K. Hwu, S. K. Seol, Y. B. Kwon, C. H. Chen, H. W. Liou, H. M. Lin, G. Margaritondo, and J. H. Je, "X-ray Synthesis of Nickel-gold Composite Nanoparticles", MATER. CHEM. PHYS. **100**, 292 (2006).

01B1 SWLS-X-ray Microscopy (PRT)

- W.-T. Chuang, U.-S. Jeng, H.-S. Sheu, and P.-D. Hong , "Competition Between Phase Separation and Crystallization in a PCL/PEG Polymer Blend Captured by Synchronized SAXS, WAXS, and DSC ", MACROMOL. RES. **14**, 45 (2006).
- C.-H. Du, Y. R. Lee, C. Y. Lo, H. H. Lin, S. L. Chang, M.-T. Tang, Y. P. Stetsko, and J. J. Lee , "Direct Measurement of Spatial Distortions of Charge Density Waves in $K_{0.3}MoO_3$ ", APPL. PHYS. LETT. **88**, 241916 (2006).
- K.-F. Ma, H. Tanaka, S.-R. Song, C.-Y. Wang, J.-H. Hung, Y.-B. Tsai, J. Mori, Y.-F. Song, E.-C. Yeh, W. Soh, H. Sone, L.-W. Kuo, and H.-Y. Wu, "Slip Zone and Energetics of a Large Earthquake from the Taiwan Chelungpu-fault Drilling Project", NATURE **444**, 473 (2006).
- Y. S. Sun, "Temperature-resolved SAXS Studies of Morphological Changes in Melt-crystallized Poly(Hexamethylene Terephthalate) and Its Melting upon Heating", POLYMER **47**, 8032 (2006).
- Y.-S. Sun, U.-S. Jeng, K. S. Liang, S.-W. Yeh, and K.-H. Wei, "Transitions of Domain Ordering and Domain Size in a Spherical-forming Polystyrene-block-poly(Ethylene Oxide) Copolymer and its Composites with Colloidal Cadmium Sulfide Quantum Dots", POLYMER **47**, 1101 (2006).
- S. H. Chen, C. H. Su, A. C. Su, Y. S. Sun, U. Jeng, and S. A. Chen, "Gibbs-thomson Analysis of Crystalline Poly(9,9-di-n-octyl-2,7-fluorene)", J. APPL. CRYSTALLOGR. **40**, s573 (2007).
- Y. S. Huang, U. S. Jeng, Y. J. Shiu, Y. H. Lai, and Y. S. Sun, "Charge Interaction and Temperature Effects on the Solution Structure of Lysozyme as Revealed by Small-angle X-ray Scattering", J. APPL. CRYSTALLOGR. **40**, s165 (2007).

01C1 SWLS-EXAFS

- S. Altwasser, R. Glaser, A. S. Lo, P.-H. Liu, K.-J. Chao, and J. Weitkamp, "Incorporation of RuO_2 Nanoparticles into MFI-type Zeolites", MICROPOR. MESOPOR. MAT. **89**, 109 (2006).
- P. J. Chang, C. T. Chia, I. N. Lin, J. F. Lee, C. M. Lin, and K. T. Wu, "Characterizing $xBa(Mg_{1/3}Ta_{2/3})O_3+(1-x)Ba(Mg_{1/3}Nb_{2/3})O_3$ Microwave Ceramics Using Extended X-ray Absorption Fine Structure Method", APPL. PHYS. LETT. **88**, 242907 (2006).
- H. M. Chen, R. S. Liu, K. Asakura, J. F. Lee, L. Y. Jang, and S. F. Hu, "Fabrication of Nanorattles with Passive Shell", J. PHYS. CHEM. B **110**, 19162 (2006).
- L.-S. Hsu, Y.-K. Wang, Y.-L. Tai, and J.-F. Lee, "Photoabsorption Study of the Electronic Structures of Ni_3Al , Ni_3Ga , Ni_3In , and $Ni_{13}In_9$ ", J. ALLOYS COMPD. **413**, 11 (2006).
- K. S. Lin and C. M. Chen, "Synthesis and UV-Shielding Application of Nanophase CeO_2/ZnO Composites", J. CHIN. COLLOID & INTERFACE SOC. **28**, 183 (2006).
- P.-H. Liu, Y.-P. Chang, T.-H. Phan, and K.-J. Chao, "The Morphology and Size of Nanostructured Au in Au/SBA-15 Affected by Preparation Conditions", MAT. SCI. ENG. C-BIO. S. **26**, 1017 (2006).
- S. H. Liu, H. M. Tsai, C. W. Pao, J. W. Chiou, D. C. Ling, W. F. Pong, H. J. Lin, L. Y. Jang, J. F. Lee, J. H. Hsu, W. J. Wang, and C. J. Hsu, "Electronic and Magnetic Properties of the Ag-doped Fe_3O_4 Films Studied by X-ray Absorption Spectroscopy", APPL. PHYS. LETT. **89**, 092112 (2006).
- H. M. Chen, C. F. Hsin, R. S. Liu, J. F. Lee, and L. Y. Jang, "Synthesis and Characterizaiton of Multi-pod-shaped Gold/Silver Nanostructures", J. PHYS. CHEM. C **111**, 5909 (2007).

- P. H. Jen, Y. H. Hsu, and S. D. Lin, "The Activity and Stability of Pd/C Catalysts in Benzene Hydrogenation", CATAL. TODAY **123**, 133 (2007).
- L. S. Sarma, C. H. Chen, G. R. Wang, K. L. Hsueh, C. P. Huang, H. S. Sheu, D. G. Liu, J. F. Lee, and B. J. Hwang, "Investigations of Direct Methanol Fuel Cell(DMFC) Fading Mechanisms", J. POWER SOURCES **167**, 358 (2007).
- L. S. Sarma, C. H. Chen, S. M. S. Kumar, G. R. Wang, S. C. Yen, D. G. Liu, H. S. Sheu, K. L. Yu, M. T. Tang, J. F. Lee, C. Bock, K. H. Chen, and B. J. Hwang, "Formation of Pt-Ru Nanoparticles in Ethylene Glycol Solution: An In Situ X-ray Absorption Spectroscopy Study", LANGMUIR **23**, 5802 (2007).
- H. M. Tsai, P. D. Babu, C. W. Pao, J. W. Chiou, J. C. Jan, K. P. K. Kumar, F. Z. Chien, W. F. Pong, M. H. Tsai, C. H. Chen, L. Y. Jang, J. F. Lee, R. S. Chen, Y. S. Huang, and D. S. Tsai, "Comparison of Electronic Structures of RuO₂ and IrO₂ Nanorods Investigated by X-ray Absorption and Scanning Photoelectron Microscopy", APPL. PHYS. LETT. **90**, 042108 (2007).
- B.-J. Hwang, L. S. Sarma, G.-R. Wang, C.-H. Chen, D.-G. Liu, H.-S. Sheu, and J.-F. Lee, "Heat-Induced Alterations in the Surface Population of Metal Sites in Bimetallic Nanoparticles", CHEMISTRY-EUR. J. (in press).

01C2 SWLS-X-ray Powder Diffraction

- H. W. Chan, J. G. Duh, and H. S. Sheu, "In Situ Synchrotron X-ray Diffraction Investigations of LiCu_xMn_{2-x}O₄ Surface Coated LiMn₂O₄ Spinel Cathode Material During Charge with Various Rates", J. ELECTROCHEM. SOC. **153**, A1533 (2006).
- H.-H. Chang, C.-C. Chang, H.-C. Wu, Z.-Z. Guo, M.-H. Yang, Y.-P. Chiang, H.-S. Sheu, and N.-L. Wu, "Kinetic Study on Low-temperature Synthesis of LiFePO₄ via Solid-state Reaction", J. POWER SOURCES **158**, 550 (2006).
- K. J. Chao, Y. P. Chang, Y. C. Chen, A. S. Lo, and T. H. Phan, "Morphology of Nanostructured Platinum in Mesoporous Materials-effect of Solvent and Intrachannel Surface", J. PHYS. CHEM. B **110**, 1638 (2006).
- H. M. Chen, H. C. Lai, R. S. Liu, and L. Y. Jang, "Local Structural Characterization of Gold Nanowires Using Extended X-ray Absorption Fine Structure Spectroscopy", CHEM. PHYS. LETT. **428**, 93 (2006).
- H. M. Chen, H. C. Peng, R. S. Liu, S. F. Hu, and H. S. Sheu, "Morphology and Surface Plasma Changes of Au-Pt Bimetallic Nanoparticles", J. NANOSCI. NANOTECHNO. **6**, 1411 (2006).
- W.-T. Chuang, U.-S. Jeng, H.-S. Sheu, and P.-D. Hong , "Competition Between Phase Separation and Crystallization in a PCL/PEG Polymer Blend Captured by Synchronized SAXS, WAXS, and DSC ", MACROMOL. RES. **14**, 45 (2006).
- J. L. Her, H. L. Liu, C. H. Shen, R. S. Liu, and H. S. Sheu, "Effect of Ca Doping on the Optical Properties of La_{1.2}Sr_{1.8}Mn₂O₇", J. APPL. PHYS. **99**, 013905 (2006).
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- M. C. Wu and C. S. Lee, "Synthesis and Thermal Decomposition of Zn(tda)H₂O [tda=S(CH₂COO)₂²⁻]", INORG. CHEM. **45**, 9634 (2006).
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- W. T. Chuang, P. D. Hong, C. H. Chen, H. S. Sheu, and U. S. Jeng, "Melting Behavior of Polymorphic Crystals of Poly(Trimethylene 2,6-naphthalate) Studied by Simultaneous Synchrotron X-ray Scattering and Thermal Analysis", *J. APPL. CRYSTALLOGR.* **40**, s637 (2007).
- U. S. Jeng, Y. H. Lai, H. S. Sheu, J. F. Lee, Y. S. Sun, W. T. Chuang, Y. S. Huang, and D. G. Liu, "Anomalous Small- and Wide-angle X-ray Scattering and X-ray Absorption Spectroscopy for Pt and Pt-Ru Nanoparticles", *J. APPL. CRYSTALLOGR.* **40**, s418 (2007).
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- P.-C. Wu, W.-S. Wang, Y.-T. Huang, H.-S. Sheu, Y.-W. Lo, T.-L. Tsai, D.-B. Shieh, and C.-S. Yeh, "Porous Iron Oxide Based Nanorods Developed as Delivery Nanocapsules", *CHEMISTRY-EUR. J.* **13**, 3878 (2007).
- W. R. Liu, N. L. Wu, D. T. Shieh, H. C. Wu, M. H. Yang, C. Korepp, J. O. Besenhard, and M. Winter, "Synthesis and Characterization of Nanoporous NiSi-Si Composite Anode for Lithium-Ion Batteries", *J. ELECTROCHEM. SOC.* (in press).
- C. H. Wu, Y. C. Chu, D. C. Ling, S. H. Liu, W. F. Pong, H. S. Hseu, J. M. Chen, and H.-C. I. Kao, "Superconductivity Dependent on the Amount of Bi and Sr in the $Bi_2Sr_2CuO_6$ Compounds", *PHYSICA C* (in press).
- J. W. Chen, H.-C. I. Kao, H. S. Sheu, Y. P. Chiang, and L. Horng, "Crystal Structure and Magnetic Properties of $(R_{0.5}A_{0.5})NiO_3$, Where R=Gd, Yb and A=Ce, Th Perovskites", *INT. J. MOD. PHYS. B* (in press).
- B.-J. Hwang, L. S. Sarma, G.-R. Wang, C.-H. Chen, D.-G. Liu, H.-S. Sheu, and J.-F. Lee, "Heat-Induced Alterations in the Surface Population of Metal Sites in Bimetallic Nanoparticles", *CHEMISTRY-EUR. J.* (in press).
- S.-L. Kuo and N.-L. Wu, "Electrochemical Capacitor of $MnFe_2O_4$ with Organic Li-Ion Electrolyte", *ELECTROCHEM. SOLID ST. LETT.* (in press).
- K.-C. Wang and C.-S. Lee, "Effect of the Transition Metal on the Synthesis of Quaternary Sulfides $MPb_8In_{17}S_{34}$ ($M = Cu, Ag, Au$)", *INORG. CHEM.* (in press).
- C. H. Chen, B. J. Hwang, J. M. Chen, and H. S. Sheu, "Soft X-ray Absorption Spectroscopy Studies on the Chemically-delithiated Commercial $LiCoO_2$ Cathode Material", *J. POWER SOURCES* (submitted).
- B. J. Hwang, S. K. Hu, C. H. Chen, C. Y. Chen, and H. S. Sheu, "Crystal Structure Changes of ZrO_2 Coated Core-shell $LiMn_{0.5}O_2$ Cathode Materials During Charge Studied by Synchrotron Based in Situ XRD", *J. POWER SOURCES* (submitted).

03A1 BM-(HF-CGM) Gas Phase/Photoluminescence

- B. M. Cheng, H. C. Lu, H. K. Chen, M. Bahou, Y. P. Lee, A. M. Mebel, L. C. Lee, M. C. Liang, and Y. L. Yung, "Absorption Cross Sections of NH_3 , NH_2D , NHD_2 , and ND_3 in the Spectral Range 140-220 nm and Implications for Planetary Isotopic Fractionation", *ASTROPHYS. J.* **647**, 1535 (2006).
- T. J. Lee, L. Y. Luo, E. W. G. Diau, T. M. Chen, B. M. Cheng, and C. Y. Tung, "Visible Quantum Cutting Through Downconversion in Green-emitting $K_2GdF_5 : Tb^{3+}$ Phosphors", *APPL. PHYS. LETT.* **89**, 131121 (2006).
- T.-J. Lee, B.-M. Cheng, and T.-M. Chen, "Visible Quantum Cutting of Green-emitting Rare Earth-activated Fluoride Phosphors", *Synchrotron Radiation Instrumentation*, Daegu, Korea (2006).
- C. H. Lu, W. T. Hsu, and B.-M. Cheng, "Luminescence Characteristics of Sol-gel Derived $Y_3Al_5O_12 : Eu^{3+}$ Phosphors Excited with Vacuum Ultraviolet", *J. APPL. PHYS.* **100**, 063535 (2006).
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- C. Y. R. Wu, D. L. Judge, and B.-M. Cheng, "EUV-VUV Photolysis of Molecular Ice Systems of Astronomical Interest", *Proceedings of the NASA Laboratory Astrophysics Workshop*, Nevada, USA (2006).
- Y. J. Chen, M. Nuevo, J. M. Hsieh, T. S. Yih, W. H. Sun, W. H. Ip, H. S. Fung, S. Y. Chiang, Y. Y. Lee, J. M. Chen, and C. Y. R. Wu, "Carbamic Acid Produced by the UV/EUV Irradiation of Interstellar Ice Analogs", *ASTRON. ASTROPHYS.* **464**, 253 (2007).

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- K. T. Kuo, S. P. Lee, S. Y. Chen, B. M. Cheng, H. C. Lu, Y. H. Hsieh, C. C. Ting, and O. Sun, "Modified Degradation of BaMgAl₁₀O₁₇: Eu Blue Phosphors with MgO Coating and Microwave Irradiation", J. PHYS. CHEM. SOLIDS (accepted).
- K. T. Kuo, S. P. Lee, C. C. Lin, S. Y. Chen, B. M. Cheng, H. C. Lu, and D. M. Liu, "Effect of Microwave Irradiation on Surface Characteristics and Luminescent Properties of BaMgAl₁₀O₁₇: Eu Blue Phosphor", J. PHYS. CHEM. SOLIDS (accepted).

04B1 BM-(Seya) Gas Phase

- S.-Y. Chiang, Y.-S. Fang, and C.-N. Lin, "Dissociation of Energy-selected *c*-C₃H₆S⁺ Studied with Threshold Photoelectron-photoion Coincidence Experiments and Calculations", CHEM. PHYS. LETT. **422**, 475 (2006).
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- C. Y. R. Wu, H. S. Fung, T. S. Singh, X. L. Mu, J. B. Nee, S. Y. Chiang, and D. L. Judge, "Fluorescence Excitation Function Produced Through Photoexcitation of the *b'*Π_u, *b'*Σ_u⁺, and *c'*Σ_u⁺ States of N₂ in the 80-100 nm Region", J. CHEM. PHYS. (submitted).

05B2 EPU-PEEM

- Y. L. Chan, J. H. Sun, Y. J. Hsu, and D. H. Wei, "Study of Co Thin Films Deposited on Low-index Cu Surfaces by Photoemission Electron Microscopy", J. MAGN. MAGN. MATER. **304**, e94 (2006).
- P. Kappen, P. S. Hale, N. Brack, W. Prissanaroon, and P. J. Pigram, "X-PEEM/NEXAFS and AFM of Polypyrrole and Copper Micro-patterns on Insulating Fluoropolymer Substrates", APPL. SURF. SCI. (submitted).

05B3 EPU-Soft X-ray Scattering

- D. J. Huang, H.-J. Lin, J. Okamoto, K. S. Chao, H.-T. Jeng, G. Y. Guo, C.-H. Hsu, C.-M. Huang, D. C. Ling, W. B. Wu, C. S. Yang, and C. T. Chen, "Charge-orbital Ordering and Verwey Transition in Magnetite Measured by Resonant Soft X-ray Scattering", PHYS. REV. LETT. **96**, 096401 (2006).
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- J. Okamoto, D. J. Huang, C. Y. Mou, K. S. Chao, H. J. Lin, S. Park, S. W. Cheong, and C. T. Chen, "Symmetry of Multiferroicity in a Frustrated Magnet TbMn₂O₅", PHYS. REV. LETT. **98**, 157202 (2007).

08A1 BM-(L-SGM) XPS, UPS

- C.-F. Chen, C.-L. Wu, and S. Gwo, "Organosilane Functionalization of InN Surface", APPL. PHYS. LETT. **89**, 252109 (2006).
- C. P. Cheng, J. F. Wen, C. P. Ouyang, J. W. Huang, and T. W. Pi, "Formation of Si-terminated SiC films on Annealing C₆₀ on a Si(001)-2x1 Surface", THIN SOLID FILMS **515**, 2106 (2006).
- C. P. Cheng, J. W. Huang, T. W. Pi, and H. H. Lee, "Surface Structure of SiC Formed by C₆₀ Molecules on a Si(001)-2×1 Surface at 800°C", J. APPL. PHYS. **99**, 123708 (2006).
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- T. W. Pi, C. H. Liu, and J. Hwang, "Surface Electronic Structure of Ca-deposited Tris(8-hydroxyquinolato) Aluminum Studied by Synchrotron Radiation Photoemission", *J. APPL. PHYS.* **99**, 123712 (2006).
- T.-W. Pi, H.-H. Lin, H.-H. Lee, and J. Hwang, "High-resolution Core Level Photoemission of Mg:Ag Deposited on Tris(8-hydroxyquinolato) Aluminum Probed by Synchrotron Radiation", *Synchrotron Radiation Instrumentation*, Daegu, Korea (2006).
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- P. J. Wu, K. D. Tsuei, M. T. Hsieh, K. H. Wei, and K. S. Liang, "Dependence of the Final-state Effect on the Coupling Between a CdSe Nanoparticle and Its Neighbors Studied with Photoemission Spectroscopy", *PHYS. REV. B* **75**, 115402 (2007).

09A1 U5-SPEM

- C.-F. Chen, C.-L. Wu, and S. Gwo, "Organosilane Functionalization of InN Surface", *APPL. PHYS. LETT.* **89**, 252109 (2006).
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