

# Appendix I

## List of Publications

# List of Publication

## *Publications Based on Experiments Performed at NSRRC Beamlines*

### 01C1 SWLS-EXAFS

- B.-J. Hwang, L. S. Sarma, J.-M. Chen, C.-H. Chen, S.-C. Shih, G.-R. Wang, D.-G. Liu, and M.-T. Tang, “*Structural Models and Atomic Distribution of Bimetallic Nanoparticles as Investigated by X-ray Absorption Spectroscopy*”, J. AM. CHEM. SOC. **127**, 11140 (2005).
- L. S. Hsu, Y. K. Wang, Y. L. Tai, and J. F. Lee, “*Photoabsorption Study of the Electronic Structures of Ni<sub>3</sub>Al, Ni<sub>3</sub>Ga, Ni<sub>3</sub>In, and Ni<sub>3</sub>In<sub>9</sub>*”, J. ALLOYS COMPD. (in press).
- D. G. Liu, J. F. Lee, and M. T. Tang, “*Characterization of Pt-Ru/C Catalysts by X-ray Absorption Spectroscopy and Temperature-programmed Surface Reaction*”, J. MOL. CATAL. A-CHEM (accepted).

### 01C2 SWLS-X-ray Power Diffraction

- Y.-M. Lin, H.-C. Wu, Y.-C. Yen, Z.-Z. Guo, M.-H. Yang, H.-M. Chen, H.-S. Sheu, and N.-L. Wu, “*Enhanced High-rate Cycling Stability of LiMn<sub>2</sub>O<sub>4</sub> Cathode by ZrO<sub>2</sub> Coating for Li-ion Battery*”, J. ELECTROCHEM. SOC. (in press).

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

- B.-M. Cheng, C.-Y. Chung, M. Bahou, Y.-P. Lee, L. C. Lee, R. Harrevelt, and M. C. Hemert, “*Quantitative Spectroscopic and Theoretical Study of the Optical Absorption Spectra of H<sub>2</sub>O, HOD, and D<sub>2</sub>O in the 125-145 nm Region*”, J. CHEM. PHYS. **120**, 224 (2004).
- O. GeBner, E. T.-H. Chrysostom, A. M. D. Lee, D. M. Wardlaw, M.-L. Ho, S.-J. Lee, B.-M. Cheng, M. Z. Zgierski, I.-C. Chen, J. P. Shaffer, C. C. Hayden, and A. Stolow, “*Non-adiabatic Intramolecular and Photodissociative Dynamics Studied by Femtosecond Time-resolved Photoelectron and Coincidence Imaging Spectroscopy*”, FARADAY DISCUSS. **127**, 193 (2004).
- H.-C. Lu, H.-K. Chen, and B.-M. Cheng, “*Photoluminescence with Synchrotron VUV Excitation*”, AIP CONF. PROC. **705**, 1082 (2004).
- H.-C. Lu, H.-K. Chen, and B.-M. Cheng, “*Analysis of C<sub>2</sub>H<sub>4</sub> in C<sub>2</sub>H<sub>6</sub> and C<sub>2</sub>H<sub>5</sub>D with VUV Absorption Spectroscopy and a Method to Remove C<sub>2</sub>H<sub>4</sub> from C<sub>2</sub>H<sub>6</sub> and C<sub>2</sub>H<sub>5</sub>D*”, ANAL. CHEM. **76**, 5965 (2004).
- C. Y. R. Wu, D. L. Judge, H. K. Chen, H. C. Lu, and B.-M. Cheng, “*Extreme Ultraviolet Photon-induced Chemical Reactions in Ices at 10 K*”, International Conference on Sciences, Honolulu, USA (2004).
- L.-J. Lai, H.-C. Lu, H.-K. Chen, B.-M. Cheng, M.-I. Lin, and T.-C. Chu, “*Photoluminescence of Zirconia Films with VUV Excitation*”, J. ELECTRON SPECTROSC. **144-147**, 865 (2005).
- Y. S. Lin, R. S. Liu, and B.-M. Cheng, “*Investigation of the Luminescent Properties of Tb<sup>3+</sup>- Substituted YAG:Ce,Gd Phosphors*”, J. ELECTROCHEM. SOC. **152**, J41 (2005).
- C.-H. Lu, W.-T. Hsu, C.-H. Huang, S. V. Godbole, and B.-M. Cheng, “*Luminescence Characteristics of Europium-ion Doped BaMgAl<sub>10</sub>O<sub>17</sub> Phosphors Prepared via a Sol-gel Route Empolying Polymerizing Agents*”, MATER. CHEM. PHYS. **90**, 62 (2005).
- H.-C. Lu, H.-K. Chen, T.-Y. Tseng, W.-L. Kuo, M. S. Alam, and B.-M. Cheng, “*Photoluminescence of Phosphors for PDP with VUV Excitation*”, J. ELECTRON SPECTROSC. **144-147**, 983 (2005).

### 04B1 BM-(Seya) Gas Phase

- S.-Y. Chiang, Y.-S. Fang, K. Sankaran, and Y.-P. Lee, “*Experimental and Quantum-chemical Studies on Photoionization and Dissociative Photoionization of CH<sub>2</sub>Br<sub>2</sub>*”, J. CHEM. PHYS. **120**, 3270 (2004).
- S.-Y. Chiang, Y.-S. Fang, M. Bahou, and K. Sankaran, “*Experiments and Calculations on Photoionization and Dissociative Photoionization of CH<sub>2</sub>CO*”, J. CHIN. CHEM. SOC.-TAIPEI **51**, 681 (2004).
- C. T. Kuo, Y. M. Chen, S. Y. Wang, S. C. Li, and J. B. Nee, “*The Photoabsorption Spectrum of CO<sub>2</sub> in 104-170 nm*”, CHINESE J. PHYS. **42**, 65 (2004).

- K. T. Lu, C. I. Ma, J. M. Chen, and S. Y. Chiang, “*VUV Photoionization of Si(CH<sub>3</sub>)<sub>2</sub>Cl<sub>2</sub> Using Synchrotron Radiation*”, CHEM. PHYS. LETT. **394**, 126 (2004).
- J. B. Nee, C. Y. Juan, J. Y. Hsu, J. C. Yang, and W. J. Chen, “*The Electronic Quenching Rates of NO(A<sup>2</sup>Σ<sup>+</sup>, v'=0-2)*”, CHEM. PHYS. **300**, 85 (2004).
- C.-R. Wen and L.-C. Chou, “*Photon-stimulated Desorption of F<sup>-</sup> Ions from CF<sub>3</sub>Cl Adsorbed on Si(111)-7x7*”, J. CHEM. PHYS. **120**, 11144 (2004).
- S.-Y. Chiang and Y.-S. Fang, “*Experimental and Quantum-chemical Studies on Dissociative Photoionization of c-C<sub>2</sub>H<sub>4</sub>S*”, J. ELECTRON SPECTROSC. **144-147**, 223 (2005).
- S.-Y. Chiang and I.-F. Lin, “*Experiments and Quantum-chemical Calculations on Rydberg States of H<sub>2</sub>CS in the Region 5.6-9.5 eV*”, J. CHEM. PHYS. **122**, 094301 (2005).
- K. T. Lu, J. M. Chen, J. M. Lee, S. C. Ho, and H. W. Chang, “*Dissociative Photoionization of Chloromethylsilanes Using VUV Synchrotron Radiation*”, J. ELECTRON SPECTROSC. **144-147**, 165 (2005).

### 05B1 EPU-Spin-polarized PES

- J. Chen, D. J. Huang, A. Tanaka, C. F. Chang, S. C. Chung, W. P. Wu, and C. T. Chen, “*Magnetic Circular Dichroism in Fe 2p Resonant Photoemission of Magnetite*”, PHYS. REV. B **69**, 085107 (2004).
- D. J. Huang, C. F. Chang, J. Chen, H.-J. Lin, S. C. Chung, H.-T. Jeng, G. Y. Guo, W. B. Wu, S. G. Shyu, and C. T. Chen, “*Orbital Moments of CrO<sub>2</sub> and Fe<sub>3</sub>O<sub>4</sub> Studied by MCD in Soft X-ray Absorption*”, J. ELECTRON SPECTROSC. **137-140**, 633 (2004).
- C. F. Chang, D. J. Huang, A. Tanaka, G. Y. Guo, S. C. Chung, S.-T. Kao, S. G. Shyu, and C. T. Chen, “*Electronic Structure of CrO<sub>2</sub> Studied by Magnetic Circular Dichroism in Resonant Photoemission*”, PHYS. REV. B **71**, 052407 (2005).

### 05B2 EPU-PEEM

- M.-H. Hsu, W.-S. Hu, J.-J. Lin, Y.-J. Hsu, D. H. Wei, C.-W. Yang, C. S. Chang, and Y.-T. Tao, “*H<sub>2</sub>S-induced Reorganization of Mixed Monolayer of Carboxylic Derivatives on Silver Surface*”, LANGMUIR **20**, 3641 (2004).
- C.-C. Lin, C.-H. Lai, D. H. Wei, Y. J. Hsu, and H.-P. D. Shieh, “*Thickness Dependence of Co Anisotropy in TbFe/Co Exchange-coupled Bilayers*”, J. APPL. PHYS. **95**, 6846 (2004).
- D. H. Wei, Y. J. Hsu, C.-C. Lin, C.-H. Lai, J.Y. Ou, and J. C. Wu, “*Layer- and Lateral-resolved Magnetization Studies Using Photoemission Electron Microscopy*”, J. MAGN. MAGN. MATER. **282**, 49 (2004).
- T. J. Chuang, R. S. Zhai, Y. L. Chan, C. K. Hsu, Y. J. Hsu, D. H. Wei, and R. Klauser, “*Chemisorption Characteristics of Methylnitrene Diradicals Adsorbed on Cu(110) Studied by UPS and PEEM*”, J. ELECTRON SPECTROSC. **144-147**, 421 (2005).
- Y. J. Hsu, W.-S. Hu, D. H. Wei, Y. S. Wu, and Y.-T. Tao, “*Mapping Molecular Orientation of Pentacene on Patterned Au Surface*”, J. ELECTRON SPECTROSC. **144-147**, 401 (2005).
- W. S. Hu, Y. T. Tao, Y. J. Hsu, D. H. Wei, and Y. S. Wu, “*Molecular Orientation of Evaporated Pentacene Films on Gold: Alignment Effect of Self-assembled Monolayer*”, LANGMUIR **21**, 2260 (2005).
- D. H. Wei, Y. J. Hsu, J.-H. Sun, C.-C. Lin, and C.-H. Lai, “*Probing the Magnetization Vectors in Layered Magnetic Structures*”, J. ELECTRON SPECTROSC. **144-147**, 737 (2005).
- L.-J. Fan, Y.-J. Hsu, and Y.-W. Yang, “*Study of Molecular Orientation in Organic Thin Film Materials via Near-edge X-ray Absorption Fine Structure Spectroscopy and Photoemission Electron Microscopy*” (in Chinese), CHEMISTRY (in press).
- 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).

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

- H.-C. Cheng, H.-L. Chen, T.-S. Ko, L.-J. Lai, F.-H. Ko, and T.-C. Chu, “*Enhanced Extreme Ultraviolet Lithography Mask Inspection Contrast Using Fabry-perot Type Antireflective Coating*”, JPN. J. APPL. PHYS. **1** **43**, 3703 (2004).
- T.-W. Pi, C.-P. Ouyang, T. C. Yu, H. L. Hsu, J.-F. Wen, and J. Hwang, “*Surface-charge Polarization Effect at an Organic and Inorganic Contact: Case Study of Tris(8-hydroxyquinolato) Aluminum on Si(001)-2x1*”, APPL. PHYS. LETT. **85**, 908 (2004).

- T.-W. Pi, C.-P. Ouyang, T. C. Yu, J.-F. Wen, and H. L. Hsu, “*Surface Electronic Structure of Mg-doped Tris(8-hydroxyquinolato) Aluminum Studied by Synchrotron Radiation Photoemission*”, *PHYS. REV. B* **70**, 235346 (2004).
- S. C. Ray, C. W. Bao, H. M. Tsai, J. W. Chiou, J. C. Jan, K. P. K. Kumar, W. F. Pong, M.-H. Tsai, W.-J. Wang, C.-J. Hsu, T. I. T. Okpalugo, P. Papakonstantinou, and J. A. McLaughlin, “*Electronic Structure and Bonding Properties of Si-doped Hydrogenated Amorphous Carbon Films*”, *APPL. PHYS. LETT.* **85**, 4022 (2004).
- J.-F. Wen, C.-H. Liu, J. Hwang, C.-P. Ouyang, and T.-W. Pi, “*Band Bending at the Ni/Si(100)-2x1 Submonolayer Interface*”, *SOLID STATE COMMUN.* **132**, 751 (2004).
- C. P. Cheng, T. W. Pi, C. P. Ouyang, and J. F. Wen, “*Chemisorption of C<sub>60</sub> on the Si(001)-2×1 Surface at Room Temperature*”, *J. VAC. SCI. TECHNOL. B* **23**, 1018 (2005).
- T.-W. Pi, T. C. Yu, C.-P. Ouyang, J.-F. Wen, and H. L. Hsu, “*Electronic Structure of Tris(8-hydroxyquinolato) Aluminum at Room Temperature and During Annealing*”, *PHYS. REV. B* **71**, 205310 (2005).
- J.-F. Wen, L.-B. Wang, C.-H. Liu, H.-H. Lee, J. Hwang, C.-P. Ouyang, T.-W. Pi, J.-W. Hwang, and C.-P. Cheng, “*Solid State Amorphization at the Room Temperature Deposited Ni/Si(100) Surface*”, *J. VAC. SCI. TECHNOL. B* (in press).

### 09A1 U5-SPEM(PRT)

- J. W. Chiou, J. C. Jan, H. M. Tsai, C. W. Bao, W. F. Pong, M. H. Tsai, I.-H. Hong, R. Klauser, J. F. Lee, J. J. Wu, and S. C. Liu, “*Electronic Structure of ZnO Nanorods Studied by Angle-dependent X-ray Absorption Spectroscopy and Scanning Photoelectron Microscopy*”, *APPL. PHYS. LETT.* **84**, 3462 (2004).
- J. W. Chiou, K. P. K. Kumar, J. C. Jan, H. M. Tsai, C. W. Bao, W. F. Pong, F. Z. Chien, M.-H. Tsai, I.-H. Hong, R. Klauser, J. F. Lee, J. J. Wu, and S. C. Liu, “*Diameter Dependence of the Electronic Structure of ZnO Nanorods Determined by X-ray Absorption Spectroscopy and Scanning Photoelectron Microscopy*”, *APPL. PHYS. LETT.* **85**, 3220 (2004).
- R. Klauser, M.-L. Huang, S.-C. Wang, C.-H. Chen, T. J. Chuang, A. Terfort, and M. Zharnikov, “*Lithography with a Focused Soft X-ray Beam and a Monomolecular Resist*”, *LANGMUIR* **20**, 2050 (2004).
- R. Klauser, C.-H. Chen, M.-L. Huang, S.-C. Wang, T. J. Chuang, and M. Zharnikov, “*Patterning and Imaging of Self-assembled Monolayers with a Focused Soft X-ray Beam*”, *J. ELECTRON SPECTROSC.* **144-147**, 393 (2005).
- A. P. J. Stampfl, C. H. Chen, S. C. Wang, M. L. Huang, and R. Klauser, “*A Scanning Photoemission Microprobe Study of the Adsorption of Cysteine on Pt{111}*”, *J. ELECTRON SPECTROSC.* **144-147**, 417 (2005).

### 09A2 U5-Spectroscopy

- J. M. Chen, K. T. Lu, J. M. Lee, C. I. Ma, and Y. Y. Lee, “*State Selective Enhanced Production of Excited Fragments and Ionic Fragments of Gaseous Si(CH<sub>3</sub>)<sub>2</sub>Cl<sub>2</sub> and Solid-state Analogs Following Core-level Excitation*”, *PHYS. REV. LETT.* **92**, 243002 (2004).
- F. T. Huang, H.-J. Jao, W.-H. Hung, K. Chen, and C. M. Wang, “*Photoinduced Aziridination Reaction Sensitized by PbO<sub>x</sub>-Modified Zeolite*”, *J. PHYS. CHEM. B* **108**, 20458 (2004).
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- Y. C. Tyan, J. D. Liao, S. B. Jong, P. C. Liao, M. H. Yang, Y. W. Chang, R. Klauser, M. Himmelhaus, and M. Grunze, “*Proteomic Profiling of Platelet Proteins by Trypsin Immobilized Self-assembled Monolayers Digestion Chip and Protein Identification Using Electrospray Ionization Tandem Mass Spectrometry*”, *J. BIOMED. MATER. RES.-A* **71A**, 90 (2004).
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- K. Lee, “*A Novel Approach to Kinetic Energy Release Distribution and Charge State Distribution Measurements*”, J. ELECTRON SPECTROSC. **144-147**, 1051 (2005).

## 11A1 BM-(Dragon) MCD, XAS(PRT)

- B. Dalela, R. K. Singhal, S. Dalela, N. L. Saini, C. T. Chen, and K. B. Garg, “*Temperature Dependent Study of Itinerant Holes in  $Bi_2Sr_2Ca_1Cu_2O_{8-\delta}$* ”, SOLID STATE COMMUN. **130**, 143 (2004).
- S. K. Gaur, R. K. Singhal, N. L. Saini, S. Dalela, C. T. Chen, H. J. Lin, and K. B. Garg, “*An Electronic Structure Study of  $La_{8-x}Sr_xCu_8O_{20-\delta}$ (8820) Single Crystal Using Polarized X-ray Absorption Spectroscopy*”, SOLID STATE COMMUN. **132**, 279 (2004).
- M. W. Haverkort, S. I. Csiszar, Z. Hu, S. Altieri, A. Tanaka, H. H. Hsieh, H.-J. Lin, C. T. Chen, T. Hibma, and L. H. Tjeng, “*Magnetic Versus Crystal-field Linear Dichroism in NiO Thin Films*”, PHYS. REV. B **69**, 020408 (2004).
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- D. J. Huang, H.-T. Jeng, C. F. Chang, G. Y. Guo, H.-J. Lin, and C.-T. Chen, “*Spin and Orbital Magnetic Moments of  $Fe_3O_4$* ”, PHYS. REV. LETT. **93**, 077204 (2004).
- D. J. Huang, W. B. Wu, G. Y. Guo, H.-J. Lin, T. Y. Hou, C. F. Chang, C. T. Chen, A. Fujimori, T. Kimura, H. B. Huang, A. Tanaka, and T. Jo, “*Orbital Ordering in  $La_{0.5}Sr_{1.5}MnO_4$  Studied by Soft X-ray Linear Dichroism*”, PHYS. REV. LETT. **92**, 087202 (2004).
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- I. F. Lee, J. C. Jan, J. W. Chiou, H. M. Tsai, C. W. Bao, W. F. Pong, M.-H. Tsai, H. H. Hsieh, T. Y. Hou, H.-J. Lin, L. Y. Jang, H. H. Hung, W. C. Chen, and J. C. A. Huang, “*Interlayer Magnetic Coupling in Epitaxial NiFe/Ru/NiFe Trilayers*”, J. PHYS.-CONDENS. MAT. **16**, 7163 (2004).
- C.-C. Lin, C.-H. Lai, D. H. Wei, Y. J. Hsu, and H.-P. D. Shieh, “*Thickness Dependence of Co Anisotropy in TbFe/Co Exchange-coupled Bilayers*”, J. APPL. PHYS. **95**, 6846 (2004).
- M.-Z. Lin, C.-H. Lee, K.-L. Yu, J. C. A. Huang, and W. C. Chen, “*X-ray Diffraction and Magnetic Circular Dichroism Study of the Fe Edge of Epitaxial Permalloy/Ru/Permalloy Trilayer*”, PHYSICA B **345**, 213 (2004).
- T. Mizokawa, L. H. Tjeng, H.-J. Lin, C. T. Chen, S. Schuppler, S. Nakatsuji, H. Fukazawa, and Y. Maeno, “*Orbital State and Metal-insulator Transition in  $Ca_{2-x}Sr_xRuO_4$  ( $x=0.0$  and  $0.09$ ) Studied by X-ray Absorption Spectroscopy*”, PHYS. REV. B **69**, 132410 (2004).
- J. Okabayashi, K. Ono, M. Mizuguchi, M. Oshima, S. S. Gupta, D. D. Sarma, T. Mizokawa, A. Fujimori, M. Yuri, C. T. Chen, T. Fukumura, M. Kawasaki, and H. Koinuma, “*X-ray Absorption Spectroscopy of Transition-metal Doped Diluted Magnetic Semiconductors  $Zn_{1-x}M_xO$* ”, J. APPL. PHYS. **95**, 3573 (2004).
- J. Park, K. H. Kim, H.-J. Noh, S.-J. Oh, J.-H. Park, H.-J. Lin, and C.-T. Chen, “*Photoemission and X-ray Absorption Spectroscopy Studies on Cubic Pyrochlore Ruthenates  $Bi_{2-x}Y_xRu_2O_7$* ”, PHYS. REV. B **69**, 165120 (2004).
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- M. W. Haverkort, Z. Hu, A. Tanaka, G. Ghiringhelli, H. Roth, M. Cwik, T. Lorenz, C. Schubler-Langeheine, S. V. Streltsov, A. S. Mylnikova, V. I. Anisimov, c. Nadai, N. B. Brookes, H. H. Hsieh, H. J. Lin, C. T. Chen, T. Mizokawa, Y. Taguchi, Y. Tokura, D. I. Khomskii, and L. H. Tjeng, “*Determination of the Orbital Moment and Crystal-field Splitting in  $LaTiO_3$* ”, PHYS. REV. LETT. **94**, 056401 (2005).
- D.-H. Kim, J.-S. Yang, Y.-S. Kim, T.-W. Noh, S.-D. Bu, S.-I. Baik, Y.-W. Kim, Y.-D. Park, S. J. Pearton, J.-Y. Kim, J.-H. Park, H.-J. Lin, C. T. Chen, and Y.-J. Song, “*Effects of High-temperature Postannealing on Magnetic Properties of Co-doped Anatase  $TiO_2$  Thin Films*”, PHYS. REV. B **71**, 014440 (2005).
- W. B. Wu, D. J. Huang, J. Okamoto, A. Tanaka, H.-J. Lin, F. C. Chou, A. Fujimori, and C. T. Chen, “*Orbital Symmetry and Electron Correlation in  $Na_xCoO_2$* ”, PHYS. REV. LETT. **94**, 146402 (2005).

- C. K. Yang, J. W. Chiou, H. M. Tsai, C. W. Pao, J. C. Jan, S. C. Ray, C. L. Yeh, K. C. Huang, H. C. Hsueh, W. F. Pong, M.-H. Tsai, H. H. Hsieh, H. J. Lin, T. Y. Hou, and J. H. Hsu, “*Electronic Structure and Magnetic Properties of Al-doped Fe<sub>3</sub>O<sub>4</sub> Films Studied by X-ray Absorption and Magnetic Circular Dichroism*”, APPL. PHYS. LETT. **86**, 062504 (2005).
- C.-H. Lai, C.-T. Shen, P.-H. Huang, C.-T. Chen, and H.-J. Lin, “*Co-existence of Biquadratic and Unidirectional Anisotropy in IrMn/CoFe/FeO<sub>x</sub>/CoFe Films*”, IEEE T. MAGN. (accepted).

## 15B1 BM-Tender X-ray Absorption, Diffraction

- W.-D. Chang, H.-H. Hung, T.-E. Dann, T.-W. Huang, and S.-Y. Wu, “*X-ray Reflectivity and Total-reflection Fluorescence Analysis of Amorphous SiO<sub>2</sub>/Ta<sub>2</sub>O<sub>5</sub> Thin Films*”, CHINESE J. PHYS. **42**, 607 (2004).
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- T. H. Ko, H. Chu, L. K. Chaung, and T. K. Tseng, “*High Temperature Removal of Hydrogen Sulfide Using an N-150 Sorben*”, J. HAZARD. MATER. **114**, 145 (2004).
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