

REFEREED PUBLICATIONS (Refereed Journals)

1. P.L. Russo, J. Sugiyama, J.H. Brewer, E.J. Ansaldo, S.L. Stubbs, K.H. Chow, R. Jin, H. Sha, and Jiandi Zhang, *Muon Spin Rotation/relaxation Study of Ba₂CoO₄*, Phys. Rev. B, accepted.
2. Ya. B. Losovyi, Melanie Klinke, En Cai, Idaykis Rodriguez, Jiandi Zhang, L. Makinistian, A. G. Petukhov, E. A. Albanesi, P. Galiy and Ya. Fiyala Lviv, Jing Liu and P.A. Dowben, Appl. Phys. Lett., **92**, 122107 (2008).
3. R. G. Moore, Jiandi Zhang, V.B. Nascimento, J. Rundgren, R. Jin, D. Mandrus, and E. W. Plummer, *Manifestations of Broken Symmetry: The Surface Phases of Ca_{2-x}Sr_xRuO₄*, Phys. Rev. Lett. **100**, 066102 (2008).
4. H. Z. Guo, A. Gupta, Jiandi Zhang, M. Varela, and S. J. Pennycook, *Effect of Oxygen Concentration on the Magnetic Properties of La₂CoMnO₆ Thin Films*, Appl. Phys. Lett. **91**, 202509 (2007)
5. R. G. Moore, Jiandi Zhang, V. B. Nascimento, R. Jin, Jiandong Guo, G.T. Wang, Z. Fang, D. Mandrus, and E. W. Plummer, *A Surface Tailored Purely Electronic Mott Insulator-to-Metal Transition*, Science **318**, 615 (2007).
6. Jiandi Zhang, F. Ye, Hao Sha, Pengcheng Dai, J.A. Fernandez-Beca, and E.W. Plummer, *Magnons in ferromagnetic Metallic Manganites*, J. Phys. Condens. Matter **19**, 315204 (2007).
7. Lei Cai, Xuewen Wang, Y. Darici, Jiandi Zhang, and P.A. Dowben, *Energetics of the Dipole Flip-Flop Motion in a Ferroelectric Polymer Chain*, J. Chem. Phys. **126**, 124908 (2007).
8. V.B. Nascimento, R.G. Moore, J. Rundgren, Jiandi Zhang, Lei Cai, R. Jin, D. Mandrus, and E.W. Plummer, *LEED on Metal Oxides: Ca_{1.5}Sr_{0.5}RuO₄ (001) Surface*, Phys. Rev. B **75**, 035408 (2007).
9. R. Jin, Hao Sha, P. Khalifah, R.E. Sykora, B.C. Sale, D. Mandrus, and Jiandi Zhang, *Ba₂CoO₄: Crystal growth, Structure Refinement, and Physical Properties*, Phys. Rev. B **73**, 174404 (2006).
10. J. Xiao, L.G. Rosa, M. Poulsen, D-Q Feng, S.D. Reddy, J.M. Takacs, Lei Cai, Jiandi Zhang, S. Ducharme, and P.A. Dowben, *Comparison of the Electronic Structure of Two Polymers with Strong Dipole Ordering*, J. Phys.: Condens. Matter. **18**, L155 (2006).
11. Jiandi Zhang, Ismail, R.G. Moore, S.-C. Wang, H. Ding, R. Jin, D. G. Mandrus, and E. W. Plummer, *Dopant-Induced Nanoscale Electronic Inhomogeneity in Ca_{2-x}Sr_xRuO₄*, Phys. Rev. Lett. **96**, 066401 (2006).
12. F. Ye, Pengcheng Dai, J.A. Fernandez-Baca, Hao Sha, J.W. Lynn, H. Kawano-Furukawa, Y. Tomioka, Y. Tukur, and Jiandi Zhang, *Evolution of Spin-Wave Excitations in Ferromagnetic Metallic Manganites*, Phys. Rev. Lett. **96**, 047204 (2006).
13. C.C. Ilie, S. Balaz, L.G. Rosa, Jiandi Zhang, P. Lunca-Popa, C. Bianchetti, R. Tittsworth, J.I. Brand, R. Doudin, P.A. Dowben, *The coadsorption and Interaction of Molecular Icosahedra with Mercury*, Appl. Phys. A **81**, 1613 (2005).
14. C.C. Ilie, P. Lunca-Popa, Jiandi Zhang, B. Doudin, Peter A. Dowben, *Mater. Res. Soc. Symp. Proc.* **848**, FF6.5.1-FF6.5.6 (2005)
15. S.-C. Wang, H. –B. Yang, A. Sekharan, H. Ding, C.X. Lu, Jiandi Zhang, Rongying Jin, D.G. Mandrus, and E.W. Plummer, *ARPES study of the Electronic Structure Evolution in Ca_{2-x}Sr_xRuO₄*, Phys. Rev. Lett. **93**, 177007 (2004).
16. Lei Cai, Hongwei Qu, Chenxi Lu, S. Ducharme, P.A. Dowben and Jiandi Zhang, *Surface Structure of Ultrathin Copolymer Films of Ferroelectric Vinylidene Fluoride (70%) with Trifluoroethylene (30%) on Graphite*, Phys. Rev. B **70**, 155411 (2004).
17. Chenxi Lu, Jiandi Zhang, R. Jin, Hongwei Qu, J. He, D. Mandrus, Ku-Ding Tsuei, Chuan-Tze Tzeng, Li-Cheng Lin, and E. W. Plummer, *An Imperfection-Driven Phase Transition at 120 K in Cd₂Re₂O₇*, Phys. Rev. B **70**, 092506 (2004).
18. Rob G. Moore, Jiandi Zhang, S.V. Kalinin, Ismail, A.P. Baddorf, R. Jin, D.G. Mandrus, and E.W. Plummer, *Surface Dynamics of Layered Ruthenates Ca_{1.9}Sr_{0.1}RuO₄*, Phys. Stat. Sol. **241**, 2363 (2004).
19. Hongwei Qu, W. Yao, T. Garcia, Jiandi Zhang, S. Ducharme, P. A. Dowben, A. V. Sorokin, and V. M. Fridkin, *Nanoscale Polarization Manipulation and Conductance Switching in Ultrathin Films of a Ferroelectric Copolymer*, Appl. Phys. Lett. **82**, 4322 (2003).

20. Ismail, L. Petersen, Jiandi Zhang, R. Jin, D. G. Mandrus, and E. W. Plummer, *The surface of Mo-doped Sr₂RuO₄: a LEED and STM Study*, *Surf. Sci.* **529**, 151 (2003).
21. Ismail, Jiandi Zhang, R. Matzdorf, E. W. Plummer, T. Kimura, and Y. Tokura, *Surface Lattice Dynamics of layered Transition-Metal Oxides: Sr₂RuO₄ and La_{0.5}Sr_{1.5}MnO₄*, *Phys. Rev. B* **67**, 035407 (2003).
22. E. W. Plummer, R. Matzdorf, A. V. Melechko, J. Pierce, and Jiandi Zhang, *Surfaces: A Playground for Physics with Broken Symmetry in Reduced Dimensionality*, *Surf. Sci.* **500**, 1(2002).
23. Kui-juan Jin, Jiandi Zhang, Zhen-hao Chen, and Guo-zhen Yang, *Fano Resonance in Photoconductive Response in Semiconductor Layer with Shallow Donor*, *Phys. Rev. B* **64**, 205203 (2001).
24. Jiandi Zhang, P. Dai, J. A. Fernandez-Baca, E. W. Plummer, Y. Tomioka, and Y. Tokura, *John-Teller Phonon Anomaly and Dynamic Phase Fluctuations in La_{0.7}Ca_{0.3}MnO₃*, *Phys. Rev. Lett.* **86**, 3823 (2001).
25. I. N. Yakovkin, Jiandi Zhang, and P. A. Dowben, *Interplay Between Plasmons and the Band Structure for the Mo(112) Surface*, *Phys. Rev. B* **63**, 115408 (2001).
26. E. W. Plummer, Ismail, R. Matzdorf, A. V. Melechko, and Jiandi Zhang, *The Next Twenty Five Years of Surface Physics*, *Prog. Surf. Sci.* **67**, 17 (2001).
27. R. Matzdorf, Z. Fang, Ismail, Jiandi Zhang, T. Kimura, Y. Tokura, K. Terakura, and E. W. Plummer, *Ferromagnetism Stabilized by Lattice Distortion at the Surface of p-Wave Superconductor: Sr₂RuO₄*, *Science* **289**, 746 (2000).
28. P. Dai, Jiandi Zhang, J. A. Fernandez-Baca, H. Y. Hwang, Y. Tomioka, and Y. Tokura, *Magnon Damping by Magnon-Phonon Coupling in Manganese Perovskites*, *Phys. Rev. B* **61**, 9553 (2000).
29. T. McAvoy, Jiandi Zhang, C. Waldfried, D. N. McIlroy, and P. A. Dowben, *The Interplay between the Surface Band Structure and Possible Surface Reconstructions of Mo(112)*, *Euro. Phys. J. B* **14**, 747 (2000).
30. Jiandi Zhang, Ismail, P. J. Rous, A. P. Baddorf, and E. W. Plummer, *The Periodic Lattice Distortion Accompanying the Charge Density Wave Transition for Sn/Ge(111)*, *Phys. Rev. B* **60**, 2860 (1999).
31. H. H. Weitering, J. M. Carpinelli, A. V. Melechko, Jiandi Zhang, M. Bartkowiak, and E. W. Plummer, *Defect-Mediated Condensation of a Charge Density Wave*, *Science* **285**, 2107 (1999).
32. J. Choi, Jiandi Zhang, S -H Liou, P. A. Dowben, and E. W. Plummer, *The Surfaces of the Perovskite manganites La_{1-x}Ca_xMnO₃*, *Phys. Rev. B* **59**, 13453 (1999).
33. A.P. Baddorf, V. Jahns, Jiandi Zhang, J. Carpinelli, and E. W. Plummer, *An x-Ray Structural Study of Charge Density Wave Transition in the Alpha Phase of Sn on Ge(111)*, *Phys. Rev. B* **57**, 4579 (1998).
34. W. W. Pai, Z. Zhang, Jiandi Zhang, and J. F. Wendelken, *'Molecular Broom': Direct Visualization in Manipulation of Ultrasmall Molecular Objects at Room Temperature*, *Surf. Sci. Lett.* **393**, 106 (1997).
35. D. Welipitiya, C. N. Borca, P. A. Dowben, I. Gobulukoglu, Hong Jiang, B. W. Robertson, Jiandi Zhang, *Fabrication of Micron Scale Magnetic Nickel Features by Selective Area Organometallic Chemical Vapor Deposition*, *Mat. Res. Soc. Symp.* **475**, 257 (1997).
36. C. W. Hutchings, D. Welipitiya, C. Waldfried, H. S. V. de Silva, G. Gallup, P. A. Dowben, W. W. Pai, Jiandi Zhang, and J. F. Wendelken, *Preferential Bonding Orientations of Ferrocene on Surfaces*, *J. Phys. Chem. B* **101**, 9782 (1997).
37. Jiandi Zhang and E. W. Plummer, *The Surface Phonons of La_{1-x}Ca_xMnO₃*, *Surf. Sci.* **393**, 64 (1997).
38. W. W. Pai, Jiandi Zhang, J. F. Wendelken, R.J. Warmack, *Magnetic nanostructures fabricated by STM-assisted Chemical Vapor Deposition*, *J. Vac. Sci. Techno. B* **15**, 785 (1997).
39. P. A. Dowben, D. N. McIlroy, Jiandi Zhang, and E. Rühl, *When Are Thin Films of Metals Metallic? Part III*, *Mat. Sci. Eng. A* **217/218**, 258 (1996).
40. D. N. McIlroy, C. Waldfried, Jiandi Zhang, J. -W. Choi, F. Foong, S. H. Liou, and P. A. Dowben, *A Comparison of the Temperature Dependent Electronic Structure of the Perovskites La_{0.65}A_{0.35}MnO₃ (A = Ca, Ba)*, *Phys. Rev. B* **54**, 17438 (1996).
41. D. N. McIlroy, Jiandi Zhang, P. A. Dowben, and D. Heskett, *Band Gaps of Doped and Undoped Films of Molecular Icosahedra*, *Mat. Sci. Eng. A* **217/218**, 64 (1996).

42. P. Dai, Jiandi Zhang, H. A. Mook, S. -H. Liou, P. A. Dowben, and E. W. Plummer, *Lattice and Static/Dynamic Jahn-Teller Effects in $La_{1-x}Ca_xMnO_3$* , Solid State Commun. **100**, 865 (1996).
43. P. Dai, Jiandi Zhang, H. A. Mook, S. -H. Liou, P. A. Dowben, and E. W. Plummer, *Experimental Evidence for the Dynamic Jahn-Teller Effect in $La_{0.65}Ca_{0.35}MnO_3$* , Phys. Rev. B **54**, R3694 (1996).
44. D. Welipitiya, Y. L. He, Jiandi Zhang, P. I. Oden, T. Thundat, R. J. Warmack, I. Gobulukoglu, Z. S. Shan, D. J. Sellmyer, and P. A. Dowben, *Fabrication of Large Arrays of Micro-Scale Magnetic Features by Selective Area OMCVD*, J. Appl. Phys. **80**, 1867 (1996).
45. D. Welipitiya, P. A. Dowben, Jiandi Zhang, W. W. Pai, and J. F. Wendelken, *The Adsorption and Desorption of Ferrocene on $Ag(100)$* , Surf. Sci. **367**, 20 (1996).
46. D. Welipitiya, A. Green, J. P. Woods, P. A. Dowben, B. W. Robertson, D. Byun, Jiandi Zhang, *Ultraviolet and Electron Radiation Induced Fragmentation of Adsorbed Ferrocene*, J. Appl. Phys. **79**, 8730 (1996).
47. Jiandi Zhang, D. N. McIlroy, P. A. Dowben, S. H. Liou, R. F. Sabirianov, and S. S. Jaswal, *The Valence-Band Structure of $La_{1-x}Ca_xMnO_3$* , Solid. State Commun. **97**, 39 (1996).
48. C. Waldfried, D. N. McIlroy, Jiandi Zhang, and P. A. Dowben, G. A. Katrich, and E. W. Plummer, *The Debye Temperature of the $Mo(112)$ Determined by Valence Band Photoemission*, Surf. Sci. **363**, 296 (1996).
49. D. N. McIlroy, Jiandi Zhang, S. H. Liou, and P. A. Dowben, *Changes in Screening and Electron Density Across the Coupled Metallic-Magnetic Phase Transition of $La_{1-x}Ca_xMnO_3$* , Phys. Lett. A **207**, 367 (1995).
50. Jiandi Zhang, D. N. McIlroy, and P. A. Dowben, *The Correlation between Screening and Effective Mass across the Metal-Nonmetal Transition in Ultrathin Films*, Phys. Rev. B **52**, 11380 (1995).
51. D. N. McIlroy, Jiandi Zhang, P. A. Dowben, P. Xu, and D. Heskett, *The Coadsorption of Metals and Molecular Icosahedra on $Cu(100)$* , Surf. Sci. **328**, 47 (1995).
52. Jiandi Zhang, D. Li, P. A. Dowben, and M. Onellion, *Angle-resolved Photoemission Study of Oxygen Chemisorption on $Gd(0001)$* , Surf. Sci. **329**, 177 (1995).
53. P. A. Dowben, D. Li, Jiandi Zhang, and M. Onellion, *Resonant Photoemission Studies of Thickness Dependence of the Unoccupied $Gd\ 5d$ Bands*, J. Vac. Sci. Technol. A **13**, 1549 (1995).
54. Jiandi Zhang, D. N. McIlroy, P. A. Dowben, H. Zeng, G. Vidali, D. Heskett, and M. Onellion, *Electronic Structure of Molecular Icosahedra*, J. Phys.: Condensed Matter **7**, 7185 (1995).
55. Jiandi Zhang, D. N. McIlroy, and P. A. Dowben, *Changes in Electron Effective Mass Across the Nonmetal-Metal Transition in Magnesium Overlayers*, Europhys. Lett. **29**, 469 (1995).
56. D. Byun, S. Hwang, Jiandi Zhang, H. Zeng, F. K. Perkins, G. Vidali, and P. A. Dowben, *Synchrotron Radiation Induced Decomposition of Closo-1, 2- dicabododecaborane*, Jpn. J. Appl. Phys. **34**, L941 (1995).
57. Jiandi Zhang, D. N. McIlroy, and P. A. Dowben, *Change in the Density of States near E_F and Nonmetal-Metal Transition in Mg Overlayers on $Mo(112)$* , Phys. Rev. B **49**, 13780 (1994).
58. D. Byun, S. Lee, Y. -F. Hu, G. M. Bancroft, S.-D. Hwang, J. A. Glass Jr., Jiandi Zhang, J.T.Spencer, Jian Ma, and P.A.Dowben, *Photoemission from Gaseous and Condensed Molecular Carborane Cluster Molecules*, J. Electrosc. Relat. Phenom. **69**, 111 (1994).
59. H. Zeng, D. Byun, Jiandi Zhang, G. Vidali, M. Onellion, and P. A. Dowben, *Adsorption and Bonding of Molecular Icosahedra on $Cu(100)$* , Surf. Sci. **313**, 239 (1994).
60. Jiandi Zhang, D. Li, and P. A. Dowben, *Layer by Layer Growth of Hg on $W(110)$* , J. Vac. Sci. Technol. A **12**, 2190 (1994).
61. Jiandi Zhang, D. Li, and P. A. Dowben, *The Electronic Properties of Metallic Mercury Monolayers on $W(110)$ Surface*, J. Phys.: Condens. Matter **6**, 33 (1993).
62. Jiandi Zhang, D. Li, and P. A. Dowben, *The Metal-Nonmetal Transition in Surface Islands on Metal Surface*, Phys. Lett. A **173**, 183 (1993).
63. D. Li, Jiandi Zhang, and P.A. Dowben, *Altering the $Gd(0001)$ Surface Electronic Structure with Hydrogen Adsorption*, Phys. Rev. B **48**, 5612 (1993).

64. D. Li, Jiandi Zhang, P. A. Dowben, M. Onellion, K. Garrison, P. D. Johnson, H. Tang, T. G. Walker, H. Hopster, J. C. Scott, D. Weller, and D. P. Pappas, *Canted Magnetic Moments at the Gd(0001) Surface*, *Mat. Res. Soc. Symp.* **313**, 451 (1993).
65. D. Li, Jiandi Zhang, K. Garrison and P. A. Dowben, *Evidence for Imperfect Ferromagnetic Coupling between the Gd(0001) Surface and Bulk*, *J. Phys.: Condens. Matter* **5**, L73 (1993).
66. D. Li, Jiandi Zhang, P. A. Dowben, and M. Onellion, *Temperature-Dependent Electronic Structure in a Localized-Magnetic-Moment System: Gadolinium*, *Phys. Rev. B* **45**, 7272 (1992).
67. D. Li, Jiandi Zhang, P. A. Dowben, Rong-Tzong Wu and M. Onellion, *The Effect of Magnetic Ordering on the Temperature Dependence of the Gadolinium Bulk Band Structure*, *J. Phys.: Condens. Matter* **4**, 3929 (1992).
68. D. Li, Jiandi Zhang, S. Lee, G. Vidali, and P. A. Dowben, *Evidence for the Formation of Metallic Mercury Overlayers on Si(111)*, *Phys. Rev. B* **45**, 11876 (1992).
69. Y. J. Kime, Jiandi Zhang, and P. A. Dowben, *Lateral Interactions and Structural Phase Transitions in Ultrathin Hg Films*, *Surf. Sci.* **268**, 92 (1992).
70. Y. J. Kime, Jiandi Zhang, and P. A. Dowben, *Thermal Desorption of Hg Monolayers from Cu(100)*, *Mat. Res. Soc. Symp.* **229**, 221 (1991).
71. C. Schwartz, M. Karimi, Jiandi Zhang, and G. Vidali, *The Interaction Potential and Derived Scattering and Thermodynamic Quantities of H₂ with the MgO(001) Surface*, *Surf. Sci.* **247**, 51 (1991).