Books

"Chemistry – The Central Science" 14th Edition T.L. Brown, H.E. LeMay, B.E. Bursten, C.J. Murphy, P.M. Woodward, M.W. Stoltzfus, Pearson, Upper Saddle River, NJ (2018).

"Chemistry – The Central Science" 13th Edition T.L. Brown, H.E. LeMay, B.E. Bursten, C.J. Murphy, P.M. Woodward, M.W. Stoltzfus, Pearson, Upper Saddle River, NJ (2015).

"Using bond valences to model the structures of ternary and quaternary oxides", M. W. Lufaso and P. M. Woodward in *Structure and Bonding: Bond Valences*, edited by I. D. Brown and K. R. Poeppelmeier, Springer, New York, NY (2014).

"Chemistry – The Central Science" 12th Edition T.L. Brown, H.E. LeMay, B.E. Bursten, C.J. Murphy, P.M. Woodward, Pearson, Upper Saddle River, NJ (2012).

"Chemistry – The Central Science" 11th Edition T.L. Brown, H.E. LeMay, B.E. Bursten, C.J. Murphy, P.M. Woodward, Pearson, Upper Saddle River, NJ (2009).

"The electronic structure of metal oxides", P.M. Woodward, H. Mizoguchi, Y.I. Kim, M.W. Stoltzfus in *Metal Oxides: Chemistry and Applications*, edited by J.L.G Fierro, CRC Press, Boca Raton, FL (2005).

Complete Publications List:

1. "$Cs_4Cd_{1-x}Mn_xBi_2Cl_{12}$ – A Vacancy Ordered Halide Perovskite Phosphor with High Efficiency Orange-Red Emission" N. P. Holzapfel, J. D. Majher, T. A. Strom, C. E. Moore, P. M. Woodward, Chem. Mater. (accepted).
2. "Broadband white emission in $Cs_2AgIn_{1-x}Bi_xCl_6$ phosphors" M. B. Gray, J. D. Majher, T. A. Strom, P. M. Woodward, Inorg. Chem. 58, 13403–13410 (2019).
3. "Synthesis and reactivity of Zr MOFs assembled from P^NN^NP–Ru pincer complexes" A. A. Kassie, P. Duan, M. B. Gray, K. Schmidt-Rohr, P. M. Woodward, C. R. Wade, Organometallics 38, 3419–3428 (2019).
4. "$Cs_2AgBiBr_{6-x}Br_x$ solid solutions – Band gap engineering with halide double perovskites" M. B. Gray, E. T. McClure, P. M. Woodward, J. Mater. Chem. C 7, 9686–9689 (2019).
5. "Postsynthetic metal exchange in a metal–organic framework assembled from Co(II) phosphine pincer complexes" A. A. Kassie, P. Duan, E. T. McClure, K. Schmidt-Rohr, P. M. Woodward, C. R. Wade *Inorg. Chem.* **58** 3227-3236 (2019).
6. "$Cs_2NaBiCl_6:Mn^{2+}$ – A new orange-red halide double perovskite" J. D. Majher, M. B. Gray, T. Amanda Strom, P. M. Woodward, *Chem. Mater.* **31**, 1738-1744 (2019).

7. "Origin of magnetic excitation gap in double perovskite Sr_2FeOsO_6" A. E. Taylor, R. Morrow, M. D. Lumsden, S. Calder, M. H. Upton, A. I. Kolesnikov, M. B. Stone, R. S. Fishman, A. Paramenkanti, P. M. Woodward, A. D. Christianson, *Phys. Rev. B* **98**, 214422 (2018).
8. "Negative and positive thermal expansion-like volume changes due to intermetallic charge transfer based on an ionic crystal model of transition-metal oxides" Y. Shimikawa, M. W. Lufaso, P. M. Woodward, *APL Materials* **6**, 086106 (2018).
9. "A symmetry roadmap to new perovskite multiferroics" P. M. Woodward, *Acta Cryst. A* **74**, 291–292 (2018).
10. "The crystal structure and magnetic behavior of quinary osmate and ruthenate double perovskites La*ABB'*O_6 (*A* = Ca, Sr; *B* = Co, Ni; *B'* = Ru, Os)" R. Morrow, M. A. McGuire, J. Yan, P. M. Woodward, *Inorg. Chem.* **57**, 2989–3001 (2018).
11. "Type I antiferromagnetic order in Ba_2LuReO_6: Exploring the role of structural distortions in double perovskites containing $5d^2$ ions" J. Xiong, J. Yan, A. A. Aczel, P. M. Woodward, *J. Solid State Chem.* **258**, 762–767 (2018).
12. "Spin-orbit coupling controlled J = 3/2 electronic ground state in $5d^3$ oxides" A. E. Taylor, S. Calder, R. Morrow, H. L. Feng, M. H. Upton, M. D. Lumsden, K. Yamaura, P. M. Woodward, A. D. Christianson, *Phys. Rev. Lett*. **118**, 207202 (2017).
13. "$Cs_{1-x}Rb_xPbCl_3$ and $Cs_{1-x}Rb_xPbBr_3$ solid solutions: Understanding tilting in lead halide perovskites" M. R. Linaburg, E. T. McClure, J. D. Majher, P. M. Woodward, *Chem. Mater.* **29**, 3507-3514 (2017).
14. "Thin film deposition of double perovskite oxides for multilayer device applications" A. H. Johnson, P. Morris, R. Ricciardo, P. M. Woodward, *Thin Solid Films* **622**, 48-55 (2017).
15. "Evaluating $NaREMgWO_6$ (RE = La, Gd, Y) doubly ordered double perovskites as Eu^{3+} phosphor hosts" A. R. Sharits, J. F. Khoury, P. M. Woodward, *Inorg. Chem.* **55**, 12383-12390 (2016).
16. "Quantitative STEM Imaging of order-disorder phenomena in double perovskite thin films" B. D. Esser, A. J. Hauser, R. E. A. Williams, L. J. Allen, P. M. Woodward, F. Y. Yang, D. W. McComb, *Phys. Rev. Lett.* **117**, 176101 (2016).
17. "Spin-orbit coupling control of anisotropy, ground state and frustration in $5d^2$ Sr_2MgOsO_6" R. Morrow, A. E. Taylor, D. J. Singh, J. Xiong, S. Rodan, A. U. B. Wolter, S. Wurmehl, B. Buchner, M. B. Stone, A. I. Kolesnikov, A. A. Aczel, A. D. Christianson, P. M. Woodward, *Sci. Reports* **6**, 32462 (2016).
18. "Spin-orbit coupling controlled ground state in Sr_2ScOsO_6" A. E. Taylor, R. Morrow, R. S. Fishman, S. Calder, A. I. Kolesnikov, M. D. Lumdsen, P. M. Woodward, A. D. Christianson, *Phys. Rev. B* **93**, 220408 (2016).
19. "Structural, magnetic, and optical properties of $A_3V_4(PO_4)_6$ (*A* = Mg, Mn, Fe, Co, Ni)" S. H. Porter, J. Xiong, M. Avdeev, D. Merz, P. M. Woodward, Z. Huang, *Inorg. Chem.* **55**, 5772-5779 (2016).
20. "Epitaxial growth of iridate pyrochlore $Nd_2Ir_2O_7$ films" J. C. Gallagher, B. D. Esser, R. Morrow, S. R. Dunsiger, R. E. A. Williams, P. M. Woodward, D. W. McComb, F. Y. Yang *Scientific Reports* **6**, 22282 (2016).
21. "Magnetism in Ca_2CoOsO_6 and Ca_2NiOsO_6: Unravelling the mystery of superexchange interactions between 3d and 5d ions" R. Morrow, K. Samanta, T.

Saha-Dasgupta, J. Xiong, J. W. Freeland, D. Haskel, P. M. Woodward *Chem. Mater.* **28**, 3666-3675 (2016).

22. "The Effect of Chemical Pressure on the Structure and Properties of A_2CrOsO_6 (A = Sr, Ca) Ferrimagnetic Double Perovskites" R. Morrow, J. R. Soliz, A. J. Hauser, J. C. Gallagher, M. A. Susner, M. D. Sumption, A. A. Aczel, J. Yan, F. Yang, P. M. Woodward, *J. Solid State Chem.* **238**, 46-52 (2016).
23. "Cs_2AgBiX_6: New visible light absorbing lead free halide perovskite semiconductors" E. T. McClure, M. R. Ball, W. Windl, P. M. Woodward, *Chem. Mater.* 28, 1348-1354 (2016).
24. "Incorporation of gallium-68 into the crystal structure of Prussian blue to form $(KGa_xFe_{1-x})^{68}Ga[Fe(CN)_6]$ nanoparticles: Toward a novel bimodal PET/MRI imaging agent" M. S. Kandanapitiye, M. D. Gott, A. Sharits, S. S. Jurisson, P. M. Woodward, S. P. D. Huang, *Dalton Trans.* **45**, 9174-9181 (2016).
25. "Magnetic structure of the quasi-one-dimensional La_3OsO_7 as determined by neutron powder diffraction" R. Morrow, M. A. Susner, M. D. Sumption, P. M. Woodward, *Phys. Rev. B* **92**, 134402 (2015).
26. "Effects of chemical pressure on the magnetic ground states of the osmate double perovskites $SrCaCoOsO_6$ and Ca_2CoOsO_6" R. Morrow, J. Yan, M. A. McGuire, J. W. Freeland, D. Haskel, P. M. Woodward, *Phys. Rev. B* **92**, 094435 (2015).
27. "Near-nanoscale-resolved energy band structure of $LaNi_3/La_{2/3}MnO_3/SrTiO_3$ heterostructures and their interfaces" T. J. Asel, H. T. Gao, J. J. Heini, D. Adkins, P. M. Woodward, J. Hoffman, A. Bhattacharya, L. J. Brillson, *J. Vacuum Sci. Tech. B* **33**, 04E103 (2015).
28. "Magnetic order and electronic structure of the $5d^3$ double perovskite Sr_2ScOsO_6" A. E. Taylor, R. Morrow, D. J. Singh, S. Calder, M. D. Lumsden, P. M. Woodward, A. D. Christianson, *Phys. Rev. B* **91**, 100406 (2015).
29. "Flux growth and characterization of Sr_2NiWO_6 single crystals" C. G. F. Blum, A. Holcombe, M. Gellesch, M. I. Sturza, S. Rodan, R. Morrow, A. Maljuk, P. Woodward, P. Morris, A. U. B. Wolter, B. Buchner, S. Wurmehl, *J. Cryst. Growth* **421**, 39-44 (2015).
30. "Electronic structure and photocatalytic water oxidation activity of *R*$TiNO_2$ (*R* = Ce, Pr and Nd) perovskite nitride oxides" S. H. Porter, Z. Huang, S. Dou, S. Brown-Xu, A.T.M. Golam Sarwar, R. C. Myers, P. M. Woodward, *Chem. Mater*. **27**, 2414-2420 (2015).
31. "Structural and magnetic properties of *R*$TiNO_2$(*R*=Ce, Pr, Nd) perovskite nitride oxides" S. H. Porter, Z. Huang, Z. Cheng, M. Avdeev, Z. Chen, X. Dou, P. M. Woodward, *J. Solid State Chem.* **226**, 279-285 (2015).
32. "Raman studies of A_2MWO_6 tungstate double perovskites" R. L. Witherow, A. M. Heyns, P. M. Woodward, *Dalton Trans.* **44**, 279-285 (2015).
33. "Strain tunable extraordinary magnetocrystalline anisotropy in Sr_2CrReO_6 epitaxial films" J. M. Lucy, M. R. Ball, O. D. Restrepo, A. J. Hauser, J. R. Soliz, J. W. Freeland, P. M. Woodward, W. Windl, F. Y. Yang, *Phys. Rev B* **90**, 180401 (2014).
34. "Hydrothermal crystal growth and structure determination of double hydroxides $LiSb(OH)_6$, $BaSn(OH)_6$ and $SrSn(OH)_6$" H. Mizoguchi, N. Bhuvanesh, Y.-I. Kim, S. Ohara, P. M. Woodward, *Inorg. Chem.* **53**, 10570-10577 (2014).

35. "Probing the links between structure and magnetism in $Sr_{2-x}Ca_xFeOsO_6$ double perovskites" R. C. Morrow, J. W. Freeland, P. M. Woodward, *Inorg. Chem.* **53**, 7398-7992 (2014).
36. "Magnetic structure in epitaxially strained Sr_2CrReO_6 thin films by element-specific XAS and XMCD" A. J. Hauser, J. M. Lucy, M. W. Gaultois, M. R. Ball, J. R. Soliz, Y. Choi, O. D. Restrepo, W. Windl, J. W. Freeland, D. Haskel, P. M. Woodward, F. Y. Yang, *Phys. Rev. B* **89**, 180402 (2014).
37. "Cation non-stoichiometry in pulsed laser deposited $Sr_{2+y}Fe_{1+x}Mo_{1-x}O_6$ epitaxial films" T. L. Meyer, M. Dixit, R. E. A. Williams, M. A. Susner, H. A. Fraser, D. W. McComb, M. D. Sumption, T. R. Lemberger, P. M. Woodward, *J. Appl. Phys.* **116**, 013905 (2014).
38. "Metal-to-metal charge transfer in AWO_4 (A = Mg, Mn, Co, Ni, Cu, or Zn) compounds with the wolframite structure" S. Dey, R. A. Ricciardo, H. L. Cuthbert, P. M. Woodward, *Inorg.Chem.* **53**, 4394-4399 (2014)."Order-disorder transition involving the A-site cations in $Ln^{3+}Mn_3V_4O_{12}$ perovskites" Y. Shimakawa, S. B. Zhang, T. Saito, M. W. Lufaso, P. M. Woodward, *Chem.* **53**, 594-599 (2014).
39. "Independent Ordering of Two Interpenetrating Magnetic Sublattices in the Double Perovskite Sr_2CoOsO_6" R. Morrow, R. Mishra, O. D. Restrepo, M. R. Ball, W. Windl, S. Wurmehl, U. Stockert, B. Büchner, and P. M. Woodward, *Amer. Chem. Soc.* **135**, 18824-18830 (2013).
40. "Probing the spin pumping mechanism: Exchange coupling with exponential decay in $Y_3Fe_5O_{12}$/barrier/Pt heterostructures" C. H. Du, H. L. Wang, Y. Pu, T. L. Meyer, P. M. Woodward, F. Y. Yang, P. C. Hammel, *Rev. Lett.* **111**, 247202 (2013).
41. "Epitaxial films of Heusler compound $Co_2FeAl_5Si_{0.5}$ with high crystalline quality grown by off-axis sputtering" B. Peters, A. Alfonsov, C. G. F. Blum, S. J. Hageman, P. M. Woodward, S. Wurmehl, B. Buchner, F. Y. Yang, *Appl. Phys. Lett.* **103**, 162404 (2013).
42. "Structures of α-$K_3MoO_3F_3$ and α-$Rb_3MoO_3F_3$: Ferroelectricity from anion ordering and noncooperative octahedral tilting" A. M. Fry, P. M. Woodward, *Growth Design* **13**, 5404-5410 (2013).
43. "Electrical and optical properties of Sb-doped $BaSnO_3$" H. Mizoguchi, P.Chen, P. Boolchand, V. Ksenofontov, C. Felser, P. W. Barnes, P. M. Woodward, *Mater.* **25**, 3858-3866 (2013).
44. "Electronic structure of tantalum oxynitride perovskite photocatalysts" S. Balaz, S. H. Porter, P. M. Woodward, L. J. Brillson, *Mater.* **25**, 3337-3343 (2013).
45. "Buffer-layer enhanced structural and electronic quality ferrimagnetic Sr_2CrReO_6 epitaxial films" J. M. Lucy, A. J. Hauser, H. L. Wang, J. R. Soliz, M. Dixit, R. E. A. Williams, A. Holcombe, P. Morris, H. L. Fraser, D. W. McComb, P. M. Woodward, F. Y. Yang, *Phys. Lett.* **103**, 042414 (2013).
46. "Theory of Strain-Controlled Magnetotransport and Stabilization of the Ferromagnetic Insulating Phase in Manganite Thin Films" A. Mukherjee, W. S. Cole, P. M. Woodward, M. Randeria, N. Trivedi, *Rev. Lett*. **110**, 157201 (2013).
47. "Theory of half-metallic double perovskites II. Effective spin Hamiltonian and disorder effects" O. N. Meetei, O. Erten, A. Mukherjee, M. Randeria, N. Trivedi, P. M. Woodward, *Rev. B*. **87**, 165105 (2013).

48. “Theory of half-metallic double perovskites I. Double exchange mechanism” O. N. Meetei, O. Erten, A. Mukherjee, M. Randeria, N. Trivedi, P. M. Woodward, *Rev. B*. **87**, 165104 (2013).
49. “Gallium Analogue of Soluble Prussian Blue $KGa[Fe(CN)_6]\cdot nH_2O$: Synthesis, Characterization and Potential Biomedical Applications ” M. S. Kandanapitiye, B. Valley, L. D. Yang, A. M. Fry, P. M. Woodward, S. D. Huang, *Chem*. **52**, 2790-2792 (2013).
50. “Theory of high T_C ferrimagnetism in a multi-orbital Mott insulator” O. Erten, O. N. Meetei, A. Mukherjee, M. Randeria, N. Trivedi, P. M. Woodward, *Rev. Lett*. **110**, 087203 (2013).
51. “Electronic and magnetic tunability of Sr_2CrReO_6 films by growth-mediated oxygen modulation” A.J. Hauser, J.M. Lucy, H.L. Wang, J.R. Soliz, A. Holcomb, P. Morris, P.M. Woodward, F.Y. Yang, *Phys. Lett.* **102**, 032403 (2013).
52. “Magnetic order from Chemical Chaos” R. Mishra, J. R. Soliz, P. M. Woodward, W. Windl, *Mater* **24**, 2757–2763 (2012).
53. “Fully ordered Sr_2CrReO_6 epitaxial films: A high temperature ferrimagnetic semiconductor” A. J. Hauser, J. R. Soliz, M. Dixit, R. E. A. Williams, M. A. Susner, B. Peters, L. M. Mier, T. L. Gustafson, M. D. Sumption, H. L. Fraser, P. M. Woodward, F. Y. Yang, *Rev. B* **85**, 161201 (2012).
54. “The Incommensurately Modulated Structures of the Perovskites $NaCeMnWO_6$ and $NaPrMnWO_6$” S. Garcia-Martin, G. King, G. Nenert, C. Ritter, P.M. Woodward, *Chem.* **51**, 4007–4014 (2012).
55. “The structural characterization of $(NH_4)_2B_{10}H_{10}$ and thermal decomposition studies of $(NH_4)_2B_{10}H_{10}$ and $(NH_4)_2B_{12}H_{12}$”, T. B. Yisgedu, Z. G. Huang, X. N. Chen, H. K. Lingam, G. King, A. Highly, S. Maharrey, P. M. Woodward, R. Behrens, S. G. Shore, J. C. Zhao, *J. Hydrogen Energy* **37**, 4267–4273 (2012).
56. “Production and isolation of pH sensing materials by carbonate melt oxidation of iridium and platinum” M. J. O’Malley, P. M. Woodward, H. Verweij, *Mater. Chem.* **22**, 7782–7790 (2012).
57. “$Na_5Ag_{1.5}MO_3F_3$ (M = Mo, W): An ordered oxyfluoride derivative of the $LiNbO_3$ structure” A. M. Fry, H. A. Seibel II, I. N. Lokuhewa, P. M. Woodward, *J. Amer. Chem. Soc.* **134**, 2621–2625 (2012).
58. “Structures of ordered tungsten- or molybdenum-containing quaternary perovskite oxides” B. E. Day, N. D. Bley, H. R. Jones, R. M. McCullough, H. W. Eng, S.H. Porter, P. M. Woodward, P. W. Barnes, *Solid State Chem.* **185**, 107-116 (2012).
59. “Theory of Half-metallic Ferrimagnetism in Double Perovskites” O. Erten, O. N. Meetei, A. Mukherjee, M. Randeria, N. Trivedi, P. Woodward, *Rev. Lett*. **107**, 257201 (2011).
60. “Material design and high-pressure synthesis of novel A-site ordered perovskites AMn_3Al_4O12 (A = Y, Yb, and Dy) with Square-Planar-Coordinated Mn^{3+}” T. Saito, T. Tohyama, P. M. Woodward, Y. Shimakawa, *Bull. Chem. Soc. Jpn.* **84**, 802806 (2011).
61. “The High-Temperature Polymorphs of K_3AlF_6” G. King, A. M. Abakumov, P. M. Woodward, A. Llobet, A. A. Tsirlin, D. Batuk, E. V. Antipov, *Inorg. Chem.* **50**, 7792–7801 (2011).

62. “Linking local structure and properties in perovskites containing equal concentrations of manganese and ruthenium” G. King, R.A. Ricciardo, J.R. Soliz, P.M. Woodward, A. Llobet, *Phys. Rev. B* **83**, 134123 (2011).
63. "Spontaneous superlattice formation in the doubly ordered perovskite $KLaMnWO_6$" S. Garcia-Martin, G. King, E. Urones-Garrote, G. Nenert, P.M. Woodward, *Chem. Mater.* **23**, 163–170 (2011).
64. "Unlocking the potential of half-metallic Sr_2FeMoO_6 films through controlled stoichiometry and double-perovskite ordering” A.J. Hauser, R.E.A. Williams, R.A. Ricciardo, A. Genc, M. Dixit, J.M. Lucy, P.M. Woodward, H.L. Fraser, F.Y. Yang, *Phys. Rev. B.* **83**, 014407 (2011).“First principles study of defective, non-stoichiometric Sr_2FeMoO_6” R. Mishra, O. D. Restrepo, P. M. Woodward, W. Windl, *Mater* **22**, 6092–6102 (2010).
65. “A new tetragonal crystalline polymorph of lithium octa-n-butoxy-napthalocyanine (LiNc-BuO) radical: Structural, magnetic and oxygen-sensing properties” R. Pandian, N. Raju, J. Gallucci, P. M. Woodward, A. Epstein, P. Kuppusamy, *Mater.* **22**, 6254–6262 (2010).
66. “X-ray photoemission spectroscopy of Sr_2FeMoO_6 film stoichiometry and valence state” M. Rutkowski, A.J. Hauser, F.Y. Yang, R. Ricciardo, T. Meyer, P.M. Woodward, A. Holcombe, P.A. Morris, L.J. Brillson, *Vac. Sci. Tech. A*, **28**, 1240−1244 (2010).
67. “A Simple and Efficient Way to Synthesize Unsolvated Sodium Octahydrotriborate” Z.G. Huang, G. King, X.N. Chen, J. Hoy, T. Yisedu, H.K. Lingam, S.G. Shore, P.M. Woodward, J.C. Zhao *Chem.* **49**, 8185−8187 (2010).
68. “Structure and properties of $Sr_{1-x}Ca_xMn_5Ru_{0.5}O_3$ perovskites: Using chemical pressure to control Mn/Ru mixed valency” R. A. Ricciardo, H. L. Cuthbert, P. M. Woodward, Q. Zhou, B. J. Kennedy, Z. Zhang, M. Avdeev, L.-Y. Jang, *Chem. Mater.* **22**, 3369-3382 (2010).
69. “Crystal structure and phase transitions in Sr_3WO_6” G. King, A.M. Abakumov, J. Hadermann, A.M. Alekseeva, M.G. Rozova, T. Perkisas, P.M. Woodward, G. van Tendeloo, E.V. Antipov, *Chem.* **49**, 6058-6065 (2010).
70. “Cation ordering in perovskites”, G. King, P.M. Woodward, *Mater. Chem.* **20**, 5785-5796 (2010).
71. “Octahedral tilt twinning and compositional modulation in $NaLaMgWO_6$” G. King, S. García-Martín, P.M. Woodward, *Acta Cryst. B.* **65**, 676-683 (2009).
72. “The crystal structure of α-K_3AlF_6: elpasolites and double perovskites with broken corner-sharing connectivity of the octahedral framework” A.M. Abakumov, G. King, V.K. Laurinavichute, M.G. Rozova, P.M. Woodward, E.V. Antipov, *Chem.* **48**, 9336-9344 (2009).
73. “A TEM investigation of the $(Bi_{1-x}Sr_x)Fe^{3+}O_{3-x/2}$, $0.2 \le x \le 0.67$, solid solution and a suggested superspace structural description thereof” R.L. Withers, L. Bourgeois, K. Balamurugan, N. Harish Kumar, P.N. Santhosh, P.M. Woodward, *Solid State Chem.* **182**, 2176-2184 (2009).
74. “The electronic structures of vanadate salts: Cation substitution as a tool for band gap manipulation” M.R. Dolgos, A.M. Paraskos, M.W. Stoltzfus, S.C. Yarnell, P.M. Woodward, *Solid State Chem.* **182**, 1964-1971 (2009).
75. “Magnetic Structures of $NaLMnWO_6$ (L = La, Nd, Tb)” G. King, A.S. Wills, P.M. Woodward, *Rev. B* **79**, 224428 (2009).

76. "Magnetic and structural properties of $NaLnMnWO_6$ and $NaLnMgWO_6$ perovskites" G. King, L. Wayman, P.M. Woodward, *Solid State Chem.* **182**, 1319-1325 (2009).
77. "Molecular packing and magnetic properties of lithium naphthalocyanine crystal: Hollow channels enabling permeability and paramagnetic sensitivity to molecular oxygen" R.P. Pandian, M. Dolgos, C. Marginean, P.M. Woodward, P.C. Hammel, P.T. Manoharan, and P. Kuppusamy, *Mater. Chem.* **24**, 4138-4147 (2009).
78. "Structural, magnetic and electronic characterization of double perovskites $Bi_xLa_{2-x}MnMO_6$ (M = Ni, Co; x = 0.25, 0.50)" R.A. Ricciardo, A.J. Hauser, F.Y. Yang, H. Kim, W. Lu, P.M. Woodward, *Res. Bull.* **44**, 239-247 (2009).
79. "Synthesis and Characterization of Color Variants of Nitrogen- and Fluorine-Substituted TiO_2" A. Seibel, P. Karen, T. R. Wagner, P.M. Woodward, *J. Mater. Chem.* **19**, 471-477 (2009).
80. "Transmission electron microscopy studies of $NaLaMgWO_6$: A spontaneously formed perovskite nanocomposite with long range periodicity" S. García-Martín, E. Urones-Garrote, M.C. Knapp, G. King, M. Woodward, *J. Amer. Chem. Soc.* **130**, 15028-15037 (2008).
81. "Structure and properties of Li_2MO_3 (*M* = Ru, Ir, Pt) and Li_3RuO_4, M. J. O'Malley, H. Verweij, P.M. Woodward, *Solid State Chem.* **181**, 1803-1809 (2008).
82. "Characterization of electronic structure and defect states of thin epitaxial $BiFeO_3$ films by UV-visible absorption and cathodoluminescence spectroscopies" A.J. Hauser, J. Zhang, L. Mier, R.A. Ricciardo, P.M. Woodward, T.L. Gustafson, L.J. Brillson, F.Y. Yang, *Phys. Lett.* **92**, 22901 (2008).
83. "Joining of highly aluminum-doped lanthanum strontium manganese oxide with tetragonal zirconia by plastic deformation" J.V. Spirig, J.L. Routbort, D. Singh, G. King, P.M. Woodward, P.K. Dutta, *Solid State Ionics* **179**, 550-557 (2008).
84. "Phase and structural characterization of $Sr_2Nb_2O_7$ and $SrNbO_3$ thin films grown via pulsed laser ablation in O_2 or N_2 atmospheres" K.R. Balasubramaniam, Y. Cao, N. Patel, S. Havelia, P.J. Cox, E.C. Devlin, E.P. Yu, B.J. Close, P.M. Woodward, P.A. Salvador, *Solid State Chem.* **181**, 705-714 (2008).
85. "Structurally frustrated polar nano regions in $BaTaO_2N$ and the relationship between its high dielectric permittivity and that of $BaTiO_3$" R. L. Withers, Y. Liu, P. M. Woodward, Y.-I. Kim, *Phys. Lett.* **92**, 102907 (2008).
86. "Electronic, Magnetic and Structural Properties of Sr_2MnRuO_6 and $LaSrMnRuO_6$ Double Perovskites" M. Woodward, J. Goldberger, M. W. Stoltzfus, H. W. Eng, R. A. Ricciardo, P. N. Santhosh, P. Karen, A. R. Moodenbaugh, *J. Amer. Ceram. Soc.* **91**, 1796-1806 (2008).
87. "Syntheses and characterizations of complex perovskite oxynitrides $LaMg_{1/3}Ta_{2/3}O_2N$, $LaMg_{1/2}Ta_{1/2}O_{5/2}N_{1/2}$, and $BaSc_{05}Ta_{0.95}O_{2.1}N_{0.9}$" Y. I. Kim, P. M. Woodward, *J. Solid State Chem.* **180**, 3224-3233 (2007).
88. "Crystal structures and dielectric properties of ordered double perovskites containing Mg^{2+} and Ta^{5+}" Y. I. Kim, P. M. Woodward, *Solid State Chem.* **180**, 2798-2807 (2007).
89. "Synthesis and characterization of new *AA*'*B*WO_6 perovskites exhibiting simultaneous ordering of A-site and B-site cations" G. King, Thimmaiah, A. Dwivedi, P. M. Woodward *Chem. Mater.* **19**, 6451-6458 (2007).

90. "Synthesis, structure, characterization and calculations of two new Sn^{2+}-W^{6+}-oxides, Sn_2WO_5 and Sn_3WO_6" H. Y. Chang, K. M. Ok, J. H. Kim, M. W. Stoltzfus, P. M. Woodward, P. S. Halasyamani, *Chem.* **46**, 7005-7011 (2007).
91. "Structure-Function Studies of Modular Aromatics Comprising Molecular Organogels" C. Baddeley, Z. Yan, G. King, P. M. Woodward, J. D. Badjic, *Organic Chem.* **72**, 7270-7278 (2007).
92. "Complex Perovskites: A chessboard at the nanoscale" P. M. Woodward, *Nature Materials*, **6**, 549-551 (2007).
93. "Local atomic ordering in $BaTaO_2N$ studied by neutron pair distribution function analysis and density functional theory" K. Page, M. W. Stoltzfus, Y.-I. Kim, Th. Proffen, P. M. Woodward, A. K. Cheetham, R. Seshadri, *Mater.* **19**, 4037-4042 (2007).
94. "Structure and Oxygen-sensing Paramagnetic Properties of a New Lithium 1,8,15,22-tetraphenoxyphthalocyanine Radical Probe for Biological Oximetry" P. Pandian, M. Dolgos, V. Dang, J. Z. Sostaric, P. M. Woodward, P. Kuppusamy, *Chem. Mater.* **19**, 3545-3552 (2007).
95. "Structure and Bonding in $SnWO_4$, $PbWO_4$ and $BiVO_4$: Lone Pairs vs. Inert Pairs" M. W. Stoltzfus, P. M. Woodward, R. Seshadri, J.-H. Klepeis, B. E. Bursten, *Chem.* **46**, 3839-3850 (2007).
96. "Epitaxial thin film deposition and dielectric properties of the perovskite oxynitride $BaTaO_2N$" Y.-I. Kim, W. Si, P.M. Woodward, E. Sutter, S. Park, T. Vogt, *Mater.* **19**, 618-623 (2007).
97. "The preparation and characterization of photocatalytically active TiO_2 thin films and nanoparticles using Successive-Ionic-Layer-Adsorption-and-Reaction", S. Park, E. DiMasi, Y.-I. Kim, W. Han, P. M. Woodward, T. Vogt, *Thin Solid Films* **515**, 1250-1254 (2006).
98. "Open molecular framework in lithium octabutoxy-naphthalocyanine paramagnetic crystal: Implications for the detection of oxygen and nitric oxide by EPR spectroscopy" P. Pandian, Y.-I. Kim, P. M. Woodward, J.L. Zweier, P.T. Manoharan, P. Kuppusamy, *J. Mater. Chem.* **16**, 3609-3618 (2006).
99. "Structure Property Relationships in the ATi_2O_4 (A = Na, Ca) Family of Reduced Titanates" M.J. Geselbracht, A.S. Erickson, M.P. Rogge, J.E. Greedan, R.I. Walton, M.W. Stoltzfus, H.W. Eng, P.M. Woodward, *Solid State Chem.* **179**, 3489-3499 (2006).
100. "New Perovskite Oxide $CaCu_3Ga_2Ru_2O_{12}$: Comparison with Structural, Magnetic and Transport Properties of $CaCu_3B_2B'_2O_{12}$ Perovskite Family" -H. Byeon, S.-S. Lee, J.B. Parise, P.M. Woodward, N.H. Hur, *Chem. Mater.* **18**, 3873-3877 (2006).
101. "Electronic, magnetic and structural properties of A_2VMoO_6 perovskites (A=Ca, Sr)" P. Karen, A.R. Moodenbaugh, J. Goldberger, P.N. Santhosh, P.M. Woodward, *Solid State Chem.* **179**, 2120-2125 (2006).
102. "The Role of Local Disorder in the Dielectric Response of $BaTaO_2N$" B. Ravel, Y.-I. Kim, P.M. Woodward, C.M. Fang, *Rev. B* **73**, 184121 (2006).
103. "A-site cation ordering in $AA'BB'O_6$ perovskites" M. Knapp, P.M. Woodward, *Solid State Chem.* **179**, 1076-1085 (2006). <!DOCTYPE IUCR-ART PUBLIC "IUCr//DTD IUCr article dtd V1.1//EN"><iucr-art jid="B000000" aid="xx0000" access="pay" docsubty="FA" crt="International Union of Crystallography" language="0"><jnlinfo name="Acta Crystallographica Section B" yr="2002"

issue="1" volume="58" abbrtitle="Acta Cryst. B" coden="ASBSDK" editor="F. H. Allen" issn="0108-7681" fpage="0" lpage="0"><fm><atl> </atl>
104. "Structure Determination in $A_2M^{3+}M^{5+}O_6$ and $A_2M^{2+}M^{6+}O_6$ Ordered Perovskites: Octahedral Tilting and Pseudosymmetry" W. Barnes, P. M. Woodward, *Acta Cryst. B* **62**, 384-396 (2006).
105. "Crystal Structure Prediction of Ordered Double Perovskites: SPuDS II" Lufaso, P.W. Barnes, Woodward, *Acta Cryst. B* **62**, 397-410 (2006).
106. "A New Ferrimagnetic Oxide $CaCu_3Cr_2Sb_2O_{12}$; High-Pressure Synthesis, Structure, and Magnetic Properties" -H. Byeon, S.-S. Lee, J.B. Parise, P.M. Woodward, N.H. Hur, *Chem. Mater.* **17**, 3552-3557 (2005).
107. "Dielectric property of oxynitride perovskites containing Ta^{5+}" Y.-I. Kim, P.M. Woodward, *Ceramic Trans.* **169**, 179-186 (2005).
108. "Reactions within the System $2SrCO_3$-Fe_2O_3 – Part I. CO_2 atmosphere" P.K. Gallagher, J.P. Sanders, P.M. Woodward, I.N. Lokuhewa, *Thermal Analysis Calorimetry* **80**, 217-223 (2005).
109. "Structures of the ordered double perovskites Sr_2YTaO_6 and Sr_2YNbO_6" C.J. Howard, P.W. Barnes, B.J. Kennedy, P.M. Woodward *Acta Cryst. B* **61**, 258-262 (2005).
110. "Electronic structure studies of main group oxides possessing edge-sharing octahedra: Implications for the design of transparent conducting oxides" H. Mizoguchi, P.M. Woodward, *Mater.* **16**, 5233-5248 (2004).
111. "Strong Near Infrared Luminescence in $BaSnO_3$" H. Mizoguchi, P.M. Woodward, -H. Park, D.A. Keszler, *J. Amer. Chem. Soc.* **126**, 9796-9800 (2004).
112. "$YBaMnCoO_5$ neither valence mixed or charge ordered" P. Karen, E. Suard, F. Fauth, P.M. Woodward, *Solid State Sciences* **6**, 1195-1204 (2004).
113. "Temperature dependent total scattering structural study of $CaCu_3Ti_4O_{12}$" S. Bozin, V. Petkov, P.W. Barnes, P.M. Woodward, T. Vogt, S.D. Mahanti, S.J.L. Billinge, *J. Phys. Cond. Matt.* **16**, S5091-S5102 (2004).
114. "High-Pressure Synthesis of Metallic Perovskite Ruthenate $CaCu_3Ga_2Ru_2O_{12}$", S.-H. Byeon, S.-S. Lee, J.B. Parise, P.M. Woodward, N.H. Hur, *Mater.* **16**, 3697-3701 (2004).
115. "Polymorphism in $NaSbO_3$: Structure and bonding in ternary metal oxides" H. Mizoguchi, P.M. Woodward, -H. Byeon, J.B. Parise, *J. Amer. Chem. Soc.* **126**, 3175-3184 (2004).
116. "Jahn-Teller Distortions, Cation Ordering and Octahedral Tilting in Perovskites" M.W. Lufaso, P.M. Woodward, *Acta Cryst. B* **60**, 10-20 (2004).
117. "Characterization of the Structural, Optical and Dielectric properties of Oxynitride Perovskites AMO_2N (*A* = Ba, Sr, Ca; *M* = Ta, Nb)" Y.-I. Kim, P.M. Woodward, K.Z. Baba-Kishi, *Mater.* **16**, 1267-1276 (2004).
118. "Crystal Structures of Disordered $A_2Mn^{3+}M^{5+}O_6$ (A = Sr, Ca; M = Sb, Nb, Ru) Perovskites" M.W. Lufaso, J. Goldberger, P.M. Woodward, *Solid State Chem.* **177**, 1651-1659 (2004).
119. "Probing the Electronic Structures of Ternary Perovskite and Pyrochlore Oxides containing Sn^{4+} or Sb^{5+}" H. Mizoguchi, H.W. Eng, P.M. Woodward, *Chem.* **43**, 1667-1680 (2004).

120. "High-Pressure Synthesis and Characterization of Perovskites with Simultaneous Ordering of both the A- and B-site Cations, $CaCu_3Ga_2M_2O_{12}$ (*M* = Sb, Ta)" -H. Byeon, M.W. Lufaso, J.B. Parise, P.M. Woodward and T. Hansen, *Chem. Mater.* **15**, 3798-3804 (2003).
121. "Investigations of the electronic structure of d^0 transition metal oxides belonging to the perovskite family" H.W. Eng, P.W. Barnes, M. Auer, P.M. Woodward, *J. Solid State Chem.* **96**, 535-546 (2003).
122. "Structural tuning of charge, orbital and spin ordering in double-cell perovskite series between $NdBaFe_2O_5$ and $HoBaFe_2O_5$" P.M. Woodward, E. Suard, P. Karen, *Am. Chem. Soc.* **125**, 8889-8899 (2003).
123. "Structures of ordered double perovskites – A group theoretical analysis" C.J. Howard, B.J. Kennedy, P.M. Woodward, *Acta Cryst. B* **59**, 463-471 (2003).
124. "Optical and electrical properties of the wide gap, n-type semiconductors: $ZnBi_2O_6$ & $MgBi_2O_6$" H. Mizoguchi, N.S.P. Bhuvanesh, P.M. Woodward, *Commun.* **9**, 1084-1085 (2003).
125. "Pressure-induced cation migration and volume expansion in the defect pyrochlores $ANbWO_6$ (A = NH_4^+, Rb^+, H^+, K^+)" P.W. Barnes, P.M. Woodward, Y.J. Lee, T. Vogt, J.A. Hriljac, *Am. Chem. Soc.* **125**, 4572-4579 (2003).
126. "Pressure-induced intermediate-to-low spin state transition in $LaCoO_3$" T. Vogt, J.A. Hriljac, N.C. Hyatt, P.M. Woodward, *Rev. B* **67**, 140401 (2003).
127. "Cation and anion ordering in the layered oxyfluorides $Sr_{3-x}A_xAlO_4F$ (A = Ba, Ca)" A.K. Prodjosantoso, B.J. Kennedy, T. Vogt, P.M. Woodward, *Solid State Chem.* **172**, 89-94 (2003).
128. "Mixed valence in $YBaFe_2O_5$" P.M. Woodward, P. Karen, *Chem.* **42**, 1121-1129 (2003).
129. "Future directions in solid state chemistry: report of the NSF-sponsored workshop" R.J. Cava, F.J. DiSalvo, *et al. In Solid State Chem.* **30**, 1-101 (2002).
130. "Thermally induced A'-A site exchange in novel layered perovskites $Ag_2[Ca_5M_3O_{10}]$ (M = Nb, Ta)" N.S.P. Bhuvanesh, P.M. Woodward, *J. Am. Chem. Soc.* **124**, 14294-14295 (2002).
131. "Epitaxial thin films of the giant-dielectric-constant material $CaCu_3Ti_4O_{12}$ grown by pulsed-laser deposition" W. Si, E.M. Cruz, P.D. Johnson, P.W. Barnes, P.M. Woodward, A.P. Ramirez, *Phys. Lett.* **81**, 2056-2058 (2002).
132. "Perfluoroterephtalate-bridged complexes with M-M quadruple bonds: $(^tBuCO_2)_3M_2(\mu\text{-}O_2CC_6F_4CO_2)M_2(O_2C^tBu)_3$ where M = Mo or W. Studies of solid-state, molecular, and electronic structure and correlations with electronic and Raman spectral data" B.E. Bursten, M.H. Chisholm, R.J.H. Clark, S. Firth, C.M. Hadad, P.J. Wilson, P.M. Woodward, J.M. Zaleski, *Am. Chem. Soc.* **124**, 12244-12254 (2002).
133. "Verwey transition under oxygen loading in $RBaFe_2O_{5+w}$ (R = Nd and Sm)" P. Karen, P.M. Woodward, P.N. Santhosh, T. Vogt, P.W. Stephens, S. Pagola, *Solid State Chem.* **167**, 480-493 (2002).
134. "Intermolecular recognition and crystal packing in the molybdenum and tungsten coordination polymers as deduced from powder X-ray diffraction data" M.H. Chisholm, P.J. Wilson, P.M. Woodward, *Commun.* 566-567 (2002).
135. "Oxalate-bridged complexes of dimolybdenum and ditungsten supported by pivalate ligands: $(^tBuCO_2)_3M_2(\mu\text{-}O_2C_2O_2)M_2(O_2C^tBu)_3$" B.E. Bursten, M.H. Chisholm,

R.J.H. Clark, S. Firth, C.M. Hadad, A.M. MacIntosh, P.J. Wilson, P.M. Woodward, J.M. Zaleski, *Am. Chem. Soc.* **124**, 3050-3063 (2002).

136. "Crystal structures of the relaxor oxide Pb_2ScTaO_6 in the paraelectric and ferroelectric states" P.M. Woodward, K.Z. Baba-Kishi, *Appl. Cryst.* **35**, 233-242 (2002).
137. "Verwey transition in mixed-valence $TbBaFe_2O_5$: Two attempts to order charges" P. Karen, P.M. Woodward, J. Linden, T. Vogt, A. Studer, P. Fischer, *Rev. B* **64**, 214405-14 (2001).
138. "Predictions of the crystal structures of perovskites using the software program SPuDS" M.W. Lufaso, P.M. Woodward, *Acta Cryst. B* **57**, 725-738 (2001).
139. "The crystal structures of Pb_2ScTaO_6 and Pb_2ScNbO_6 in the paraelectric and ferroelectric states" K.Z. Baba-Kishi, P.M. Woodward, K. Knight *Ferroelectrics* **261**, 685-690 (2001).
140. "Phase separation over an extended compositional range: Studies of the $Ca_{1-x}Bi_xMnO_3$ ($x <= 0.25$) phase diagram" P.N. Santhosh, J. Goldberger, P.M. Woodward, T. Vogt, W.P. Lee, A.J. Epstein, *Rev. B* **62**, 14928-14942 (2000).
141. "Crystal chemistry of perovskite-type compounds in the tausonite-loparite series, $(Sr_{1-2x}Na_xLa_x)TiO_3$", R.H. Mitchell, A.R. Chakhmouradian, P.M. Woodward, *Chem. Minerals* **27**, 583-589 (2000).
142. "Low to High Spin State Transition Induced by Charge Ordering in Antiferromagnetic $YBaCo_2O_5$" T.Vogt, P.M. Woodward, P. Karen , B.A. Hunter, P. Henning, R. Moodenbaugh, *Phys. Rev. Lett.* **84**, 2969-2972 (2000).
143. "Synthesis, structure and optical properties of two new Perovskites: $Ba_2Bi_{2/3}TeO_6$ and $Ba_3Bi_2TeO_9$" J-H. Park and P.M. Woodward, *J. Inorg. Mater.* **2**, 153-166 (2000).
144. "Structural Studies of Charge Disproportionation and Magnetic Order in $CaFeO_3$".M. Woodward, D.E. Cox, E. Moshopoulou, A.W. Sleight and S. Morimoto, *Phys. Rev B* **62**, 844-855 (2000).
145. "Effect of compositional fluctuations on the phase transitions in $(Nd_{1/2}Sr_{1/2})MnO_3$" P.M. Woodward, D.E. Cox, T. Vogt, C.N.R. Rao, and A.K. Cheetham, *Mater.* **11**, 3528-3538 (1999).
146. "Structural studies and order-disorder phenomenon in a series of new quaternary tellurates of the type $A^{2+}M^{4+}Te^{6+}O_6$ and $A^{+}{}_2M^{4+}Te^{6+}O_6$", P.M. Woodward, A.W. Sleight, L.S. Du and C.P. Grey, *Solid State Chem.* **147**, 99-116 (1999).
147. "A novel approach for identifying and synthesizing high dielectric materials" J-H. Park, J.B. Parise, P.M. Woodward, I. Lubomirsky, O. Stafsudd, *Mater. Res.* **14**, 3192-3195 (1999).
148. "Synthesis and Structural Investigations of the Double Perovskites $REBaFe_2O_{5+w}$ (RE = Nd, Sm)" P. Karen and P.M. Woodward, *Mater. Chem.* **9**, 789-797 (1999).
149. "The High-Temperature Phases of WO_3" T. Vogt, P.M. Woodward and B.A. Hunter, *Solid State Chem.* **144**, 209-215 (1999).
150. "Sr_3MO_4F (M=Ga, Al) – A New Family of Ordered Oxyfluorides" T. Vogt, P.M. Woodward, B.A. Hunter, A.K. Projostantoso and B.J. Kennedy, *Solid State Chem.* **144**, 228-231 (1999).

151. "Synthesis, Structure and Dielectric Properties of $(Bi_{1/2}Ag_{1/2})TiO_3$" J.-H. Park, P.M. Woodward, J.B. Parise, R.J. Reeder, Lubomirsky and O. Stafsudd, *Chem. Mater.* **11**, 177-183 (1999).
152. "Liquid-mix Disorder in Crystalline Solids; $ScMnO_3$" P. Karen and P.M. Woodward, *Solid State Chem.* **141**, 78-88 (1998).
153. "The Influence of Cation Size on the Structural Features of $Ln_{1/2}A_{1/2}MnO_3$ Perovskites at Room Temperature" P.M. Woodward, T. Vogt, D.E. Cox, A. Arulraj, C.N.R. Rao, P. Karen and A.K. Cheetham, *Mater.* **10**, 3652-3665 (1998).
154. "Predictive Modeling and High-Pressure-High-Temperature Synthesis of Perovskites Containing Monovalent Silver" J.-H. Park, P. M. Woodward, and J. B. Parise, *Mater.* **10**, 3092-3100 (1998).
155. "Reentrant transition from an incipient charge-ordered state to a ferromagnetic metallic state in a rare-earth manganate", A. Arulraj, A. Biswas, A.K. Raychaudhuri, C.N.R. Rao, P.M. Woodward, T. Vogt, D.E. Cox and A.K. Cheetham, *Rev. B* **57,** R8115-R8118 (1998).
156. "Electronic Band Structure Calculations of the MNX (M=Zr, Ti; X=Cl, Br,I) System, and its Superconducting Member Li doped β-ZrNCl", P.M. Woodward and T. Vogt, *Solid State Chem.* **138**, 207-219 (1998).
157. "Structure of $Sn(ND_3)_2F_4$ – A Molecular Precursor for the Synthesis of Nitride Fluorides" P.M. Woodward and T. Vogt, *Solid State Chem.* **138**, 350-360 (1998).
158. "Ferroelectric Tungsten Trioxide" P.M. Woodward, A.W. Sleight and T. Vogt, *Solid State Chem.* **131**, 9-17 (1997).
159. "POTATO – A program for generating perovskite structures distorted by tilting of rigid octahedra" P.M. Woodward, *Appl. Cryst.* **30**, 206-207 (1997).
160. "Octahedral Tilting in Perovskites Geometrical Considerations" P.M. Woodward, *Acta Cryst.* B**53**, 32-43 (1997).
161. "Octahedral Tilting in Perovskites II. Structure Stabilizing Forces" P.M. Woodward, *Acta Cryst.* B**53**, 44-66 (1997).
162. "Structure Refinement of Triclinic Tungsten Trioxide", P.M. Woodward, A.W. Sleight and T. Vogt, *Phys. Chem. Solids*, **56**, 1305-1315 (1995).
163. "Crystal structure of Bi_2O_4 with β-Sb_2O_4-type structure", N. Kumada, N. Kinomura, P.M. Woodward and A.W. Sleight, *Solid State Chem.* **116**, 281-285 (1995).
164. "Order-disorder in $A_2M^{3+}M^{5+}O_6$ Perovskites", P.M. Woodward, R.-D. Hoffmann and A.W. Sleight, *Mater. Res.* **9**, 2118-2127 (1994).