

May 27, 2009

Joseph I. Budnick

Professor Emeritus and Research Professor
Department of Physics
University of Connecticut
2152 Hillside Road
Storrs, CT 06269-3046

Birthplace: Jersey City, New Jersey

Education: B.S. 1951 St. Peter's College
Ph.D. 1955 Rutgers University

Experience:

1953-54 ONR Fellowship
1954-55 Socony Vacuum Fellow
1955-60 Project Physicist and Group Leader, IBM Research Laboratory, Poughkeepsie, NY
1960-62 Staff Member, IBM Watson Laboratory, Columbia University
1962-74 Fordham University, Assoc. Prof. of Physics, 1962-66; Professor, 1967-74; Department Chairman, 1969-72
1972-74 Program Director, Solid State and Low Temperature Physics, National Science Foundation
1974-86 Professor and Head, Department of Physics, University of Connecticut
1986-2003 Professor, Department of Physics, University of Connecticut
2003- Professor Emeritus and Research Professor, Department of Physics, University of Connecticut

Professional Societies:

American Physical Society (Fellow)
American Association for the Advancement of Science (Fellow)

Honors or Distinctions:

AAAS Fellow, 2006

2000 Elected to Membership in the Connecticut Academy of Arts and Sciences

1999 University of Connecticut AAUP Award for Excellence in Research

1994 University of Connecticut Award for Excellence in Science

1988 First Goddard Visiting Fellow in Physics at Clark University

1986 Recipient, Alexander von Humboldt Senior U.S. Scientist Award

Member, Connecticut Academy of Science and Engineering

Guest Professor, University of Konstanz

Chairman, Committee on Opportunities in Physics of the American Physical Society, 1984

Editor, Phys. Lett. A to 1992 and Physics Reports

Board of Editors, [Journal of Magnetism and Magnetic Materials, Hyperfine Interactions, 1970-92, Appl. Phys. Lett. & J. of Appl. Phys., 1984-92]

Advisory Board, Thought Magazine to 1974

Visiting Professor, University of Strasbourg, 1980

Invited Participant, U.S.-Japan Seminar on Hyperfine Interactions involving Excited Nuclei, 1972

Guest Professor, Katholieke University of Leuven, 1978

NATO Visiting Professor, Italy, 1972

Visiting Lecturer, guest of R. Mössbauer, Technical University of Munich, 1971

NATO Senior Postdoctoral Fellow, 1967

Research Interests:

Solid state physics and materials science. Studies include x-ray absorption fine structure, nuclear magnetic resonance, transport properties, magnetic ordering, critical phenomena, muon spin rotation and general structural aspects of magnetic, semiconducting and superconducting systems. Research activities have included ion implantation studies of materials and interfacial problems associated with near surface regions of both metals and semiconductors. Studies of local magnetism in high T_c oxides and magnetic ruthenates.

Co-developer of the X-Ray Absorption Beam Line X11 at the National Synchrotron Light Source at Brookhaven National Laboratory.

Author or co-author of over 300 publications including one co-edited book.

Publications:

Books and Monographs

J. I. Budnick and M. P. Kawatra, Eds. "Dynamical Aspects of Critical Phenomena," Gordon and Breach, New York (1971).

Journal Articles:

1. J. I. Budnick, E. A. Lynton and B. Serin, "Trapped Flux in Impure Superconductive Tin," Phys. Rev. **103**, 286 (1956).
2. J. I. Budnick, "Some Studies of the Superconducting Transition in Purified Tantalum," Phys. Rev. **119**, 1578 (1960).
3. L. H. Bennett and J. I. Budnick, "Magnetic Resonance Determination of the Nuclear Moment of Tantalum-181 in KTaO_3 Phys. Rev. **120**, 1812 (1960).
4. D. P. Seraphim, J. I. Budnick and W. B. Ittner, "Single Crystal Growth and Purification of Tantalum," Trans. Metall. Soc. Aime. **218**, 527 (1960).
5. J. I. Budnick and L. H. Bennett, "Nuclear Magnetic Resonance in Tantalum Metal," J. Phys. Chem. Solids **16**, 37 (1960).
6. L. J. Bruner, J. I. Budnick and R. J. Blume, "Nuclear Magnetic Resonance of Ni^{61} in Metallic Nickel," Phys. Rev. **121**, 83 (1961).
7. J. I. Budnick, L. J. Bruner, R. J. Blume and E. L. Boyd, "Nuclear Magnetic Resonance of Fe^{57} in Unenriched Fe," J. Appl. Phys. Suppl. **32**, 120s (1961).
8. D. P. Seraphim, D. T. Novick and J. I. Budnick, "The Effects of Imperfections on the Superconducting Critical Temperature of Tantalum," Acta. Met. **9**, 446 (1961).
9. D. J. Quinn and J. I. Budnick, "Study of Superconducting Transition Temperature in Dilute Thallium Solid Solutions," Phys. Rev. **123**, 446 (1961).
10. J. I. Budnick, "Nuclear Magnetism," Magnetic Materials Digest, Produced for 1962 Conference on Magnetism and Magnetic Materials (1961).
11. F. L. Boyd, J. I. Budnick, L. J. Bruner and R. J. Blume, "Direct Observation of Domain Wall Resonance in Ferromagnetic Oxides," J. Appl. Phys. **33**, 2484 (1962).
12. J. I. Budnick, R. C. Laforce and G. F. Day, "Nuclear Magnetic Resonance Determination of the Internal Field at Fe^{57} Nuclei for Small Concentrations of Iron in Cobalt," Magnetic and Electrical Resonance and Relaxation, J. Smidt, Ed. North Holland Publishing Company, Eindhoven (1963).
13. S. G. Cohen, A. Marinov and J. I. Budnick, "Mössbauer Effect in Ta^{181} ," Phys. Lett. **12**, 38 (1964).
14. Y.-H. Kao and J. I. Budnick, "Magnetic Field Dependence of the Surface Resistance of Superconducting Tantalum," Phys. Lett. **17**, 218 (1965).
15. J. I. Budnick, J. Lechaton and S. Skalski, "Palladium Field in Ferromagnetic Pd-Fe Alloys," Phys. Lett. **22**, 405 (1966).

16. R. E. Gegenwarth, J. I. Budnick, S. Skalski and J. H. Wernick, Anisotropic Hyperfine Interactions in $ZrFe_2$ and $GdFe_2$ from A Nuclear Magnetic Resonance Study. *J. Appl. Phys.* **37**, 1244 (1966).
17. J. I. Budnick, J. Lechaton and S. Skalski, "Hyperfine Fields in Ferromagnetic Pd-Fe Alloys. *Phys. Lett.* **22**, 405 (1966).
18. E. Jones and J. I. Budnick, " ^{27}Al Knight Shift and Hyperfine Interaction in $GdAl_2$," *J. Appl. Phys.* **37**, 1250 (1966).
19. P. P. Craig, W. I. Goldberg, T. A. Kitchens and J. I. Budnick, "Transport Properties at Critical Points, the Resistivity of Nickel," *Phys. Rev. Lett.* **19**, 1334 (1967).
20. J. I. Budnick and S. Skalski, "Nuclear Magnetic Resonance in Some Magnetically Ordered Systems," in *Hyperfine Interactions*, A. J. Freedman and R. Frankel, Eds. Academic Press, Inc., New York (1967).
21. J. I. Budnick, J. Lechaton and S. Skalski, "Palladium Hyperfine Fields in Ferromagnetic Pd-Fe Alloys," *J. Appl. Phys.* **38**, 1139 (1967).
22. J. A. Mydosh, M. P. Kawatra and J. I. Budnick, "Study of the Effects of Magnetic Ordering on the Electrical Resistivity of $GdAl_2$," *Phys. Lett.* **24a**, 421 (1967).
23. R. E. Gegenwarth, J. I. Budnick, S. Skalski and J. H. Wernick, "Gadolinium Hyperfine Fields," *Phys. Rev. Lett.* **18**, 19 (1967).
24. J. I. Budnick, S. Skalski, T. J. Burch and J. H. Wernick, "Hyperfine Fields in Fe-Si Alloys," *J. Appl. Phys.* **38**, 1137 (1967).
25. J. I. Budnick, "Solid State Physics," Science Year, the World Book Science Annual, Field Enterprises Educational Association, Chicago (1968).
26. J. A. Mydosh, J. I. Budnick, M. P. Kawatra and S. Skalski, "Magnetic Ordering in Palladium-Iron Alloys," *Phys. Rev. Lett.* **21**, 1346-49 (1968).
27. S. B. Berger, J. I. Budnick, T. J. Burch, NMR of ^{53}Cr and ^{77}Se in Ferromagnetic Chalcogenide Spinels," *J. Appl. Phys.* **39**, 658 (1968).
28. J. I. Budnick, S. B. Berger and T. J. Burch, "Nuclear Magnetic Resonance Determination of the ^{125}Te Hyperfine Field in Ferromagnetic $CuCr_2Te_4$," *Phys. Lett.* **26a**, 450-51 (1968).
29. J. I. Budnick, J. Lechaton, J. H. Werwick, S. Foner, E. J. McNiff, Jr., D. J. Kim and B. B. Schwartz, "Magnetic Properties of Pd-Fe Alloys," *J. Appl. Phys.* **39**, 960 (1968).
30. J. J. Murphy, J. I. Budnick and S. Skalski, "Detailed Spin-Echo Spectra of Ferromagnetic Fe-Al Alloys," *J. Appl. Phys.* **39**, 1239 (1968).
31. S. Skalski, J. I. Budnick and J. Lechaton, "Fe Hyperfine Fields in Dilute Pd-Fe Alloys," *J. Appl. Phys.* **39**, 965 (1968).
32. J. I. Budnick, "Nuclear Magnetic Resonance in Metallic Ferromagnets," *Magnetic Resonance and Radiofrequency Spectroscopy*, Proc. XV Colloque A.M.P.E.R.E., Grenoble, 1968, North Holland Publishing Company (1969).
33. J. I. Budnick, "Solid State Physics," Science Year, the World Book Science Annual, Field Enterprises Educational Association, Chicago (1969).
34. M. P. Kawatra, S. Skalski, J. A. Mydosh and J. I. Budnick, "Critical Behavior of the Electrical Resistivity of Palladium Iron Alloys," *J. Appl. Phys.* **40**, 1202-03 (1969).

35. T. J. Burch, P. P. Craig, C. Hedrick, T. A. Kitchens, J. I. Budnick, J. A. Cannon, M. Lipsicas and D. Mattis, "Switching in Magnetite, a Thermally Driven Magnetic Phase Transition," *Phys. Rev. Lett.* **23**, 1444-47 (1969).
36. T. J. Burch, J. I. Budnick and S. Skalski, "Ni Hyperfine Field in Ni₃Fe and Its Application to the Detection of Long-Range Order," *Phys. Rev. Lett.* **22**, 846-49 (1969).
37. S. B. Berger, J. I. Budnick and T. J. Burch, "Systematics of the Hyperfine and Exchange Interactions in the Chromium Chalcogenide Spinels," *Phys. Rev.* **179**, 272-74 (1969).
38. M. P. Kawatra, S. Skalski, J. A. Mydosh and J. I. Budnick, "Effect of the Molecular Field on the Electrical Resistivity near a Magnetic Transition GdNi₂," *Phys. Rev. Lett.* **23**, 83-86 (1969).
39. J. I. Budnick, "Solid State Physics," *Science Year, the World Book Science Annual*, Field Enterprises Educational Association, Chicago (1970).
40. M. P. Kawatra and J. I. Budnick, "Transport Properties of Ferromagnetic Systems near the Critical Point, Electrical Resistivity," *Inter. J. Magnetism* **1**, 61-74 (1970).
41. S. Skalski, M. P. Kawatra, J. A. Mydosh and J. I. Budnick, "Electrical Resistivity of PdFe Alloys," *Phys. Rev. B* **2**, 3613-19 (1970).
42. M. P. Kawatra, J. I. Budnick and J. A. Mydosh, "Resistive Behavior of Dilute PdFe Alloys about the Curie Temperature," *Phys. Rev. B* **2**, 1587-92 (1970).
43. M. P. Kawatra, J. A. Mydosh and J. I. Budnick, "Electrical Resistivity near the Magnetic Transition of Some Rare-Earth Laves Phase Compounds," *Phys. Rev. B* **2**, 665-70 (1970).
44. T. J. Burch, J. I. Budnick and S. Skalski, "Investigation of Possible Crystallographic Ordering in Ferromagnetic Ni₃Co by Nuclear Magnetic Resonance," *J. Phys. Soc. of Japan* **28**, 1180-81 (1970).
45. J. I. Budnick, T. J. Burch, S. Skalski and K. Raj, "Spin-Echo Studies of Conduction Electron Polarization about the Impurity Atom in Fe-Rich Alloys," *Phys. Rev. Lett.* **24**, 511-14 (1970).
46. T. J. Burch, J. J. Murphy, J. I. Budnick and S. Skalski, "Al Hyperfine Fields in Ordered Fe-Al Alloys," *J. Appl. Phys.* **41**, 1327-28 (1970).
47. M. P. Kawatra, J. A. Mydosh, J. I. Budnick and B. Madden, "Effect of Ferromagnetic Ordering on the Resistive Behavior of Exchange Enhanced Alloys," *PtFe. Proc. 12th International Conference on Low Temperature Physics, Kyoto, Japan*, p. 773-75 (1970).
48. J. I. Budnick, "Solid State Physics," *Science Year, the World Book Science Annual*, Field Enterprises Educational Association, Chicago (1971).
49. J. A. Cannon, J. I. Budnick, M. P. Kawatra, J. A. Mydosh and S. Skalski "Critical Behavior of the Magnetic Susceptibility of GdNi₂," *Phys. Lett.* **35a**, 247-48 (1971).
50. V. Cannella, J. A. Mydosh and J. I. Budnick, "Magnetic Susceptibility of Au-Fe Alloys," *J. Appl. Phys.* **42**, 1689-90 (1971).
51. S. B. Berger, T. J. Burch, J. I. Budnick and L. Darcy, "NMR of CuCr_{2-x}V_xS₄ Spinels," *J. Appl. Phys.* **42**, 1309-10 (1971).
52. J. I. Budnick, K. Raj, T. J. Burch and F. Holtzberg, "A Nuclear Magnetic Resonance Study of the Magnetic Structure of EuSe and Its Dependence on Gadolinium Additions," *J. De Phys.* **C1**, 763-65 (1971).

53. J. I. Budnick, "Solid State Physics," Science Year, the World Book Science Annual, Field Enterprises Educational Association, Chicago (1972).
54. K. Raj, T. J. Burch and J. I. Budnick, "Spin-Echo Studies of Eu⁰ and EuS. int.," J. Magnetism **3**, 355 (1972).
55. J. I. Budnick, "Solid State Physics," Science Year, the World Book Science Annual, Field Enterprises Educational Association, Chicago (1973).
56. M. Sablik, S. Skalski and J. I. Budnick, "Influence of Electron-Electron Interaction in the Nuclear Spin-Lattice Relaxation Rates in the Dilute Ferromagnetic Alloy PdFe. Phys. Rev. B **8**, 2222.
57. J. I. Budnick and T. J. Burch, "Nuclear Magnetic Resonance in Magnetically Ordered Materials," Magnet. Resonance Rev. **2**, 247 (1973).
58. J. I. Cannon, J. I. Budnick, R. S. Craig, S. G. Sankar and D. A. Keller, "Magnetic Specific Heat Anomaly in GdNi₂," A.I.P. Conference Proc. **10** (1973).
59. K. Raj, T. J. Burch and J. I. Budnick, "Magnetic Hyperfine Interactions and Conduction Electron Polarization at Eu and Se in Eu (1-X) Gd_xSe," A.I.P. Conference Proc. **10**, 1564 (1973).
60. J. J. Murphy, T. J. Burch and J. I. Budnick, "NMR Study of NiRu and FeRu Alloys," A.I.P. Conference Proc. **10**, 1627 (1973).
61. J. I. Budnick and J. Cannon, "Critical Exponents and Scaling in GdNi₂," Proc. International Conference on Magnetism, Moscow (1973).
62. R. A. Levy, J. J. Burton, D. I. Paul and J. I. Budnick, "Mössbauer Study of Ferromagnetic Phase Transitions in (Pd_{1-x}Ag_x)_{0.99}Fe_{0.01} Alloys," Phys. Rev. B **9**, 1085 (1974).
63. J. J. Murphy, T. J. Burch and J. I. Budnick, "The Ratio of the Nuclear Moments of ⁹⁹Ru and ¹⁰¹Ru from NMR Studies of Ferromagnetic Alloys," J. Phys. Soc. of Japan **36**, 634 (1974).
64. T. J. Burch, T. Litrenta and J. I. Budnick, "Hyperfine Studies of Site Occupation in Ternary Systems," Phys. Rev. Lett. **33**, 421 (1974).
65. J. I. Budnick, V. Cannella and T. J. Burch, "The Low Field Magnetic Susceptibility of (Pd_{1-x}Ag_x)_{0.99}Fe_{0.01}," A.I.P. Conference Proc. for the Magnetism Conference, Boston. **18**, 307-11 (1974).
66. J. I. Budnick, T. J. Burch and S. B. Berger, "NMR Study of the Spin Structure of HgCr₂S₄ Proc. International Conference on Magnetism," Moscow. **3**, 402 (1974).
67. I. Wang, T. J. Burch, J. I. Budnick, J. J. Murphy and J. A. Cannon, "Temperature Dependence of the Co Hyperfine Field in GdCo₂ and Its Relation to Magnetic Structure," A.I.P. Conference Proc. **18**, 437 (1974).
68. K. V. Rao, O. Rapp, C. Johannsson, J. I. Budnick, T. J. Burch and V. Cannella, "Electrical Resistivity of (Pd_{1-x}Ag_x)_{0.99}Fe_{0.01}," A.I.P. Conference Proc. **24**, 474 (1975).
69. K. Raj, J. I. Budnick and T. J. Burch, "The Effect of Conductivity on the Eu¹⁵³ Hyperfine Interactions in EuTe," A.I.P. Conference Proc. **24**, 44 (1975).
70. V. Cannella, T. J. Burch and J. I. Budnick, "Magnetic Ordering in PdGd, Electrical Resistivity and Magnetic Susceptibility," A.I.P. Conference Proc. **24**, 464 (1975).

71. S. Pickart, T. Litrenta, T. J. Burch and J. I. Budnick, "Site Preference of Dilute Transition Metal Solutes in Fe₃Si," *Phys. Lett.* **53a**, 321 (1975).
72. J. A. Cannon, J. I. Budnick and T. J. Burch, "Transition Metal Moment Collapse in Gadolinium-Transition Metal Laves Phase Intermetallics," *Solid State Comm.* **17**, 1385 (1975).
73. K. Raj, V. Niculescu, J. I. Budnick and S. Skalski, "Investigation of Conduction Electron Polarization Effects in Fe₃Si Based Ternary Systems," *A.I.P. Conference Proc.* **29**, 348 (1976).
74. J. I. Budnick, V. Niculescu, W. A. Hines, A. H. Menotti, K. Raj, T. J. Burch and S. Pickart, "Magnetization and Neutron Diffraction Studies on Mn₃Si," *A.I.P. Conference Proc.* **29**, 437 (1976).
75. K. Raj, J. I. Budnick, R. Alben, G. C. Chi and G. S. Cargill III, "Hyperfine Field Studies of Amorphous Co-P Alloys," *A.I.P. Conference Proc.* **31**, 390 (1976).
76. V. Niculescu, K. Raj, T. J. Burch and J. I. Budnick, "Correlation of the Internal Fields, Magnetic Moments and Site Preferences in Fe_{3-x}Mn_xSi Alloys," *Phys. Rev. B* **13**, 3167 (1976).
77. W. A. Hines, A. H. Menotti, J. I. Budnick, T. J. Burch, T. Litrenta, V. Niculescu and K. Raj, "Magnetization Studies of Binary and Ternary Alloys Based on Fe₃Si. *Phys. Rev. B* **13**, 4060 (1976).
78. P. De Gasperis, F. Dupre' and J. I. Budnick, "A Nuclear Magnetic Resonance Study of Clustering in Ferromagnetic Ni-Cu Alloys," *J. Mag. Mag. Mat.* **1**, 289 (1976).
79. J. A. Cannon, J. I. Budnick, T. J. Burch, K. Raj and I. Wang, "Temperature Dependent Splitting of the ⁵⁹Co Hyperfine Field in GdCo₂," *J. Mag. Mag. Mat.* **3**, 255 (1976).
80. V. Niculescu, K. Raj, J. I. Budnick, T. J. Burch, W. A. Hines and A. H. Menotti, "Relating Structural, Magnetization and Hyperfine Field Studies to a Local Environment Model in Fe_{3-x}V_xSi and Fe₃Si_{1-x}," *Phys. Rev. B* **14**, 4160 (1976).
81. K. V. Rao, O. Rapp, C. Johannesson, J. I. Budnick, T. J. Burch and V. Cannella, "Electrical Resistivity and Magnetic Susceptibility of Pt_{1-x}Co_x," *A.I.P. Conference Proc.* **29**, 346 (1976).
82. K. Raj, V. Niculescu, T. J. Burch, J. I. Budnick and R. B. Frankel, "Mössbauer and NMR Studies of Site Substitution and Magnetic Structure of Fe_{3-x}Mn_xSi Alloys," *A.I.P. Conference Proc.* **34**, 28 (1977).
83. R. Alben, J. I. Budnick and G. S. Cargill III, "Magnetism in Metallic Glasses," in *Metallic Glasses Ch. 12*, Eds. H. J. Leamy and J. J. Gilman, Metals Park, Ohio (1977).
84. K. Raj, A. Amamou, J. Durand, J. I. Budnick and R. Hasegawa, "NMR and Mössbauer Studies of the Amorphous System Fe₇₉P_{21-x}B_x," *Amorphous Magnetism II*, Eds. R. A. Levy and R. Hasegawa, p. 221 (1977).
85. V. Niculescu, K. Raj, T. Burch and J. I. Budnick, "Hyperfine Interactions and Structural Disorder of Fe₃Si_{1-x}Al_x Alloys," *J. Phys. F, Metal Phys.* **7**, L73 (1977).
86. K. V. Rao, O. Rapp, C. Johannesson, H. U. Astrom, J. I. Budnick, T. Burch and V. Niculescu, "Electrical Resistivity of Fe Dissolved in PdAg Matrix Alloys," *Physica* **86-88b**, 831 (1977).

87. V. Niculescu, T. Litrenta, K. Raj, T. J. Burch and J. I. Budnick, "Hyperfine Fields for Transition Metals Substituted in Fe₃Si," J. Phys. Soc. Japan **42**, 1538 (1977).
88. V. Niculescu, T. J. Burch, K. Raj and J. I. Budnick, "Properties of Heusler Type Materials Fe₂T_xSi and FeCo₂Si," J. Mag. Mag. Mat. **5**, 60 (1977).
89. K. Raj, J. I. Budnick, T. J. Burch, R. Cywinski and J. G. Booth, "Local Configurational Studies of Ferromagnetic Co-Ga Alloys Using Neutron Scattering and Spin-Echo NMR," Physica **86-88b**, p. 407-409 (1977).
90. K. Raj, J. Durand, J. I. Budnick, C. C. Tsuei and S. Skalski, "³¹P NMR in the Ferromagnetic State of Amorphous Fe₇₅P₁₅C₁₀," Solid State Comm. **24**, 189 (1977).
91. V. Niculescu and J. I. Budnick, "Limits of Solubility, Magnetic Properties and Electron Concentration in Fe_{3-x}T_xSi System," Solid State Comm. **24**, 631 (1977).
92. V. Niculescu and J. I. Budnick, "Evidence for the Angular Dependence of the Hyperfine Interactions in Complex Magnetic Spin Structures," Solid State Comm. **26**, 607 (1978).
93. K. Raj, J. Durand, J. I. Budnick and S. Skalski, "NMR Studies of Metal and Metalloid Site Hyperfine Field Distributions in Magnetically Ordered Amorphous Alloys," J. Appl. Phys. **49**, 1671 (1978).
94. J. I. Budnick, W. B. Muir, V. Niculescu and K. Raj, "Electron Transport in Fe_{3+x}Si_{1-x}," inst. Phys. Conference Ser. **39**, 196 (1978).
95. J. Durand, K. Raj, S. J. Poon and J. I. Budnick, "Local and Bulk Magnetic Properties of Amorphous Ferromagnetic Gd₂Co Obtained by Splat-Cooling," IEEE Transactions on Magnetics, Mag. **14**, No. 5, p. 722 (1978).
96. W. A. Hines, J. I. Budnick, A. H. Menotti, R. N. Paolino and T. J. Burch, "Magnetic Ordering in Exchange-Enhanced (Pd_{1-y}Ag_y)_{100-x}Fe_x and (Pd_{1-y}Rh_y)_{100-x}Fe_x Alloys," Phys. Rev. B **19**, 338 (1979).
97. V. Niculescu, J. I. Budnick, W. A. Hines, K. Raj, S. Pickart and S. Skalski, "Relating Structural, Magnetic-Moment, and Hyperfine-Field Behavior to a Local-Environment Model in Fe_{3-x}Co_xSi," Phys. Rev. B **19**, 452 (1979).
98. T. J. Burch, K. Raj, P. Jena, J. I. Budnick, V. Niculescu and W. B. Muir, "Hyperfine-Field Distribution in Fe₃Si_{1-x}Al_x Alloys and a Theoretical Interpretation," Phys. Rev. B **19**, 2933 (1979).
99. P. B. Mumola and J. I. Budnick, "On-Site Graduate Program in Optics, A Case Study," IEEE Transactions on Education, **E-23** (Special Issue on Optics Education), p. 84 (1980).
100. F. A. Otter, J. I. Budnick, H. C. Hayden, A. A. Antar and P. A. Saunders, "Preparation and Characterization of Recoil Implanted Metals in Si. Proc.," The Electrochemical Society, **80-2**, p. 251 (1980).
101. S. J. Pickart, C. K. Saw, J. I. Budnick and V. Niculescu, "Atomic and Magnetic Ordering in Fe₃₋₄V_xSi Alloys," J. Phys. Chem. Solids **42**, 595 (1981).
102. V. Niculescu, W. A. Hines, J. I. Budnick, J. Perkins, G. C. Papaefthymiou and T. J. Burch, "Local-Environment Model for the Hyperfine Interactions in Fe_{3-x}Ni_xSi," Phys. Rev. B **23**, 2388 (1981).

103. T. J. Burch, J. I. Budnick, V. Niculescu, K. Raj and T. Litrenta, "Transition Metal Impurities in Dilute $Fe_{3-x}T_xSi$ Alloys, a Spin-Echo NMR Investigation," *Phys. Rev. B* **24**, 3866 (1981).
104. A. Berrada, J. Durand, T. Mizoguchi, J. I. Budnick, B. Loegel, J. C. Ousset, S. Askenazy and H. J. Guntherodt, "Electrical and Bulk Magnetic Properties of Liquid Quenched Amorphous Re_2Co Alloys," *Proc. 4th Int. Conference on Rapidly Quenched Metals*, Sendai, Japan, p. 829 (1981).
105. T. Mizoguchi, J. I. Budnick, P. Panissod, J. Durand and H. J. Guntherodt, "Local and Bulk Magnetic Properties of Liquid Quenched Amorphous $GdCo$ and $GdNi$ Alloys," *Proc., 4th Int. Conference on Rapidly Quenched Metals*, Sendai, Japan, p. 1149 (1981).
106. W. B. Muir, J. I. Budnick and K. Raj, "Electrical Resistivity and the Band Structure of $Fe_3Si_{1-x}Al_x$ Alloys," *Phys. Rev. B* **25**, 726 (1982).
107. P. Panissod, J. Durand and J. I. Budnick, "Hyperfine Fields in Metallic Glasses," *Nucl. Inst. and Meth.* **199**, 99 (1982).
108. T. J. Burch, C. A. Weiler, K. Raj, J. I. Budnick, V. Niculescu, G. C. Papaefthymiou and R. B. Frankel, "Fe Hyperfine Fields in $Fe_{3-x}V_xSi$ Alloys," *J. Mag. Mag. Mat.* **27**, 55 (1982).
109. J. W. Lynn, J. J. Rhyne and J. I. Budnick, "Observation of Spin Waves in Pd (1.5 Per Cent Fe)," *J. Appl. Phys.* **53**, (1982).
110. J. C. Ford, W. A. Hines, J. I. Budnick, A. Paoluzi, D. M. Pease, L. T. Kabacoff and C. U. Modzelewski, "Spin-Echo NMR Study of the Atomic Site Environments in the $Fe_{67}Co_{18}B_{14}Si_1$ Metallic Glass," *J. Appl. Phys.* **53**, 2288 (1982).
111. F. P. Lipschultz, J. I. Budnick, F. A. Otter and T. W. Grudkowski, "In Situ Study of the Effects of Energetic Ion and Laser Beams on Quartz and Lithium Niobate Using Surface Acoustic Waves," *Proc. IEEE 1982 Ultrasonics Symp.*, 1040 (1982).
112. M. Choi, D. M. Pease, W. A. Hines, J. I. Budnick, G. H. Hayes and L. T. Kabacoff, "Study of the Crystalline Surface of Metglas 2605 Co," *J. Appl. Phys.* **54**(7), 4193 (1983).
113. D. E. Sayers, S. M. Heald, M. A. Pick, J. I. Budnick, E. A. Stern and J. Wong, "X-Ray Beam Line at the NSLS for X-Ray Absorption Studies in Material Science," *Nucl. Instr. and Meth.* **208**, 631 (1983).
114. F. Namavar, J. I. Budnick and F. A. Otter, "Chemical Profiling and Structural Studies of Ion-Beam-Mixed Aluminum on Silicon," *Thin Solid Films* **104**, 31 (1983).
115. V. Niculescu A., T. J. Burch and J. I. Budnick, "A Local Environment Description of Hyperfine Fields and Atomic Moments in $Fe_{3-x}T_xSi$ Alloys," *J. Mag. Mag. Mat.* **39**, 223 (1983).
116. W. A. Hines, A. Paoluzi, J. I. Budnick, W. G. Clark and C.-L. Tsai, "Atomic and Electronic Structures of the Ca-Al Metallic Glass System, a Pulse NMR Study," *J. Non-Crystalline Solid* **61 & 62**, 1255 (1984).
117. D. M. Pease, G. H. Hayes, M. Choi, J. I. Budnick, W. A. Hines, R. Hasegawa and S. M. Heald, "On the Density of Unoccupied D States in Transition Metal-Metalloid Metallic Glasses," *J. Non-Crystalline Solids* **61 & 62**, 1359 (1984).

118. J. C. Ford, J. I. Budnick, W. A. Hines and R. Hasegawa, "Spin-Echo NMR Study of the Atomic Environment in the $\text{Fe}_{100-x}\text{B}_x$ Metallic Glass System," *J. Appl. Phys.* **55** (6), 2286 (1984).
119. D. M. Pease, F. Namavar, J. I. Budnick, M. Choi, J. Groeger, F. A. Otter, Y. Bruynseraede and M. Clapp, "Modifications in the Unit Cell Geometry of Sputtered Niobium Films Caused by High Energy Ion Bombardment," *Thin Solid Films* **120**, 239 (1984).
120. F. Namavar, J. I. Budnick, A. Fasihuddin, H. C. Hayden, D. M. Pease, F. A. Otter and V. Patarini, "The Influence of Implantation Conditions and Target Orientation in High Dose Implantation of Al^+ into Si," *Mat. Res. Soc. Symp. Proc.* **27**, 347 (1984).
121. F. Namavar, J. I. Budnick, H. C. Hayden, F. A. Otter and V. Patarini, "Study of Near Surface Structure and Composition for High Dose Implantation of Cr^+ into Si," *Mat. Res. Soc. Symp. Proc.* **27**, 341 (1984).
122. F. Namavar, J. I. Budnick, F. H. Sanchez and F. A. Otter, "Nuclear Resonance Profiling of High Dose Implants of Al in Si," *Nucl. Instr. and Meth.* **B7/8**, 357 (1985).
123. G. H. Hayes, W. A. Hines, D. P. Yang and J. I. Budnick, "Low Field Magnetic Anisotropy in Metglas* 2605 Co Ribbons," *J. Appl. Phys.* **57**, 3511 (1985).
124. M. Choi, D. M. Pease, W. A. Hines, G. H. Hayes, J. I. Budnick, S. M. Heald, R. Hasegawa and H. E. Schone, "Unoccupied-State Electronic Structure in $(\text{Ni}_y\text{Pt}_{1-y})_{75}\text{P}_{25}$ and $\text{Ni}_{100-x}\text{P}_x$ Metallic Glasses," *Phys. Rev. B* **32**, 7670 (1985).
125. J. I. Budnick and T. J. Burch, "Some Recent Developments in the Application of Nuclear Magnetic Resonance to Magnetically Ordered Systems," *Hyperfine Interactions* **24-26**, 377 (1985).
126. F. Namavar, J. I. Budnick and F. A. Otter, "Gettering of Impurities During High Dose Implantation of Al or Cr into Si and the Resulting Effect on Structure and Composition," *Mat. Res. Soc. Symp. Proc.* **36**, 55 (1985).
127. F. Namavar, J. I. Budnick, F. H. Sanchez and H. C. Hayden, "On the Formation of Si Oxide by Ion Implantation," *Mat. Res. Soc. Symp. Proc.* **45**, 317 (1985).
128. J. I. Budnick, "Concluding Summary III, Hyperfine Interactions Using Non-Nuclear Techniques," Intl. Workshop on Hyperfine Interactions, Kanpur, India, January 1984. *Hyperfine Interactions* **24-26**, 1113 (1985).
129. D. M. Pease, S. D. Bader, M. B. Brodsky, J. I. Budnick, T. I. Morrison, C. H. Sower, N. J. Zaluzec and A. J. Freeman, " L_3/L_2 White Line Ratios, Probe of Spin Pairing in 3d Transition Metals and Alloys," *Phys. Lett. A* **114**, 491 (1985).
130. Y. D. Zhang, W. A. Hines, J. I. Budnick, M. Choi, F. H. Sanchez and R. Hasegawa, "NMR Study of the Boron Site Occupations in Rapidly Quenched Fe-B Crystalline Alloys," *J. Mag. Mag. Mat.* **61**, 162 (1986).
131. F. H. Sanchez, J. I. Budnick, Y. D. Zhang, W. A. Hines, M. Choi and R. Hasegawa, "Mössbauer Study of the Local Atomic Environments in Metastable Crystalline Fe-B Alloys," *Phys. Rev. B* **34**, 4738 (1986).
132. S. M. Heald, M. A. Pick, J. M. Tranquada, D. E. Sayers, J. I. Budnick, E. A. Stern, J. Wong, G. Stuckey, A. Chester, G. Woolery and T. Morrison, "Materials Science EXAFS Line at the NSLS, Characterization and Initial Operations," *Nucl. Inst. and Meth.* **246**, 120 (1986).

133. F. Namavar and J. I. Budnick, "Beam Induced Compositional Changes in RBS Analysis of Polymers," Nucl. Instr. and Meth. in Phys. Res. **B15**, 285 (1986).
134. J. Tafto, R. L. Sabatini, J. I. Budnick and F. Namavar, "Surface Regions of Amorphous Si and Crystalline Al in an Al-Implanted Si Crystal," Mat. Lett. **5**, 5 (1986).
135. F. Namavar, J. I. Budnick, A. Fasihuddin, F. H. Sanchez and H. C. Hayden, "Study of High Dose Implantation of Nitrogen Isotopes into Si(100)," Mat. Res. Soc. Symp. Proc. **53**, 281 (1986).
136. F. H. Sanchez, F. Namavar, J. I. Budnick, A. Fasihuddin and H. C. Hayden, "Silicide Formation by High Dose Transition Metal Implants into Si," Mat. Res. Soc. Symp. Proc. **53**, 439(1986).
137. J. I. Budnick, D. Pease, M. Choi, Z. Tan, F. F. Namavar Sanchez, H. C. Hayden, "Krypton Xanes Studies in Implanted Systems," J. De Physique C8 Suppl. No. **12** 1053 (1986).
138. J. I. Budnick, E. Klein, B. Illerhaus, M. Choi, G. Hayes and D. Pease, "Difference in Fe Atom Environments between CuFe(2% Fe) and CuAuFe(1 and 3%) Alloys," J. De Physique C8 Suppl. No. **12**, 1037 (1986).
139. F. Namavar, J. I. Budnick, F. A. Sanchez and H. C. Hayden, "Formation of Buried SiO₂ by High Dose Implantation Oxygen at Room and Liquid Nitrogen Temperatures," Mat. Res. Soc. Sym. **53** (1986).
140. J. I. Budnick, M. Choi, D. M. Pease, Z. Tan. G. H. Hayes, E. Klein and B. Illherhaus, "Local Structural and Magnetic Environments of Iron in Dilute Alloys," S.P.I.E. **690**, 58 (1986).
141. M. Choi, J. I. Budnick, G. H. Hayes, D. M. Pease, S. M. Heald, D. E. Sayers and R. Hasegawa, "Extended X-Ray Absorption Fine Structure of Amorphous (Ni Pt(100-X)75P25 Alloys," Phys. Rev. B **36**, 4613 (1987).
142. F. H. Sanchez, F. Namavar, J. I. Budnick, A. Fasihuddin, C. H. Koch and H. C. Hayden, "Effect of Temperature on High Fluence Transition Metal Implants into Polycrystalline Aluminum," Mat. Sci. & Engr., **90**, p. 149-159 (1987).
143. A. Yaouanc, J. I. Budnick, E. Albert, A. Weidinger, R. Fruchart, Ph. L' Heritier, D. Fruchart and P. Wolfers, "Positive Muon Spectroscopy of Nd₂Fe₁₄B and Pr₂Fe₁₄B," J. Mag. Mag. Mat. **67**, L286 (1987).
144. Y. D. Zhang, J. I. Budnick, J. C. Ford, W. A. Hines and F. H. Sanchez, "Crystallization of Fe-B Amorphous Alloys, an NMR and X-Ray Study," J. Appl. Phys. **61**, 3231 (1987).
145. Y. D. Zhang, J. I. Budnick, F. H. Sanchez, W. A. Hines and D. P. Yang, "NMR Studies in Orthorhombic Fe₃B_{1-X}C_X (0.1<X<4)," J. Appl. Phys. **61**, 4358 (1987).
146. C. Hohenemser, M. Deicher, H. Hofsass, G. Lindner, E. Recknagel and J. I. Budnick, "Agricultural Impact of Chernobyl, a Warning," Nature **321**, 817 (1987).
147. F. L. A. Machado, W. G. Clark, L. J. Azevedo, D. P. Yang, W. A. Hines and J. I. Budnick, "Low Temperature Heat Capacity and Magnetic Study of the Al₈₀Mn₂₀ Icosahedral Alloy," Sol. State Comm. **61**, 145 (1987).
148. J. I. Budnick, F. H. Sanchez, Y. D. Zhang, M. Choi, W. A. Hines, Z. Y. Zhang, S. H. Ge and R. Hasegawa, "Study of the Local Structure of Metastable Crystalline Iron-Boron Alloys," Trans. IEEE on Magnetism Mag-**23**, 1937 (1987).

149. J. I. Budnick, A. Golnik, Ch. Niedermayer, E. Recknagel, M. Rossmannith, A. Weidinger, B. Chamberland, M. E. Filipkowski and D. P. Yang, "Observation of Magnetic Ordering in La_2CuO_4 by Muon Spin Rotation Spectroscopy," *Phys. Lett. A* **124**, 103 (1987).
150. J. I. Budnick, A. Golnik, Ch. Niedermayer, E. Recknagel, M. Rossmannith, A. Weidinger, B. Chamberland, M. E. Filipkowski, Y. Zhang, D. P. Yang, L. L. Lynds, F. A. Otter and C. Baines, "Study of Magnetic Ordering of High T_c Superconductor $\text{GdBa}_2\text{Cu}_3\text{O}_{7-y}$ by Muon Spin Rotation," *Phys. Lett. A* **125**, 71 (1987).
151. Y. D. Zhang, J. I. Budnick, M. Wojcik, E. Potenziani, A. T. Pedziwatr and W. E. Wallace, "NMR Study of Fe Hyperfine Field Assignments in $\text{Nd}_{15}\text{Fe}_{77}\text{B}_8$ and Co Site Preference in $\text{Nd}_{15}\text{Fe}_{77-x}\text{Co}_x\text{B}_8$," *Physical Rev. B* **36**, 8213 (1987).
152. M. Choi, J. I. Budnick, G. H. Hayes, D. M. Pease, S. M. Heald, D. E. Sayers and R. Hasegawa, "Extended X-Ray Absorption Fine Structure Study of Amorphous $(\text{Ni}_x\text{Pt}_{100-x})_{75}\text{P}_{25}$," *Phys. Rev. B* **36**, 285 (1987).
153. J. I. Budnick, F. H. Sanchez, Y. D. Zhang, M. Choi, W. A. Hines, Y. Zhang, S. H. Ge and R. Hasegawa, "Study of the Local Structure of Metastable Crystalline Ion-Boron Alloys," *IEEE Transactions on Magnetics*, May 23, 1987, p. 1937 (1987).
154. A. Yaouanc, J. I. Budnick, E. Albert, A. Weidinger, R. Fruchant, Ph. L'hintier, A. Fruchart and P. Wolfes, "Positive Muon Spectroscopy of $\text{Nd}_2\text{Fe}_{14}\text{B}$ and $\text{Pr}_2\text{Fe}_{14}\text{B}$," *J. Mag. Mag. Mat.* **67**, L286 (1987).
155. F. Namavar, H. Sanchez, J. I. Budnick, A. H. Fasihuddin and H. C. Hayden, "Systematics of Silicide Formation by High Dose Implantation of Transition Metals into Si," *Mat. Res. Soc. Symp. Proc.* **V74**, 487 (1987).
156. F. H. Sanchez, J. I. Budnick, Y. D. Zhang and J. M. Livingston, "Mössbauer Study of the Hyperfine Fields at Fe Sites in Orthorhombic $\text{Fe}_3\text{C}_{1-x}\text{B}_x$," *Hyperfine Interactions* **34**, 455 (1987).
157. J. I. Budnick, F. H. Sanchez, F. Namavar, A. Fasihuddin, J. Koch, and H. C. Hayden, "Effect of Temperature on High Fluence Transition Metal Implant into Polycrystalline Aluminum," *Mat. Sci. and Eng.* **90**, 149 (1987).
158. F. Namavar, H. Sanchez, J. I. Budnick, A. Fasihuddin, H. C. Hayden, "Systematics of Silicide Formation by High Dose Implants of Transition Metals into Si," *Mat. Res. Soc. Symp.* **74**, 487 (1987).
159. F. H. Sanchez, J. I. Budnick, Y. D. Zhang, R. Hasegawa, "Study of Rapidly Quenched $\text{Fe}_{100-x}\text{M}_x$ Crystalline Alloys by Mössbauer Effect Spectroscopy ($\text{M}=\text{B},\text{C},\text{Al},\text{Si},\text{P}$)," *J. Appl. Phys.* **61**, 4349 (1987).
160. Y. D. Zhang, J. I. Budnick, F. H. Sanchez, W. A. Hines and D. P. Yang, "NMR Studies in Orthorhombic $\text{Fe}_3\text{B}_{1-x}\text{C}_x$ ($0.1 < X < 0.4$)," *J. Appl. Phys.* **61**, 4358 (1987).
161. Y. D. Zhang, J. I. Budnick, J. C. Ford, W. A. Hines, F. H. Sanchez, R. Hasegawa, "Crystallization of Fe-B Amorphous Alloys, a NMR and X-Ray Study," *J. Appl. Phys.* **61**, 3231 (1987).
162. L. Lynds, F. Galasso, F. A. Otter, B. R. Weinberger, J. I. Budnick, D. P. Yang and M. E. Filipkowski, "Anisotropy in an Oriented $\text{YBa}_2\text{Cu}_3\text{O}_7$ Superconductor," *J. Am. Ceram. Soc.* **71**, C130 (1988).

163. A. Golnik, J. I. Budnick, B. Chamberland, L. Lynds, C. Niedermayer, F. A. Otter, E. Recknagel, M. Rossmanith, A. Weidinger, Z. Tan, "Magnetic Ordering in Oxygen Depleted $\text{YBa}_2\text{Cu}_3\text{O}_{7-\gamma}$ and $\text{GdBa}_2\text{Cu}_3\text{O}_{7-\gamma}$," *Physica C* **153-155**, 166 (1988).
164. F. A. Otter, J. I. Budnick, B. R. Weinberger, L. Lynds, D. P. Yang, S. F. Galasso, M. E. Filipkowski, W. A. Hines and D. M. Potrepka. "Anisotropic Behavior of a High T_c Superconductor," *Proc. Mat. Res. Soc.* **99**, 443 (1988).
165. A. Bianconi, J. I. Budnick, A. M. Flank, A. Fontaine, P. Lagarde, A. Marelli, H. Tolentino, B. Chamberland, C. Michel, B. Raveau and G. Demazeau, "Evidence of $3d^9$ -Ligand Hole States in the Superconductor $\text{La}_{1.85}\text{Sr}_{0.15}\text{CuO}_4$ from L_3 X-Ray Absorption Spectroscopy," *Phys. Lett. A* **127**, 285 (1988).
166. J. I. Budnick, B. Chamberland, D. P. Yang, Ch. Niedermayer, A. Golnik, E. Recknagel, M. Rossmanith and A. Weidinger, "Dependence of the Neel Temperature of La_2CuO_4 on Sr Doping -Studied by Muon Spin Rotation. *EuroPhys. Lett.* **5** (7), 651 (1988).
167. Ch. Niedermayer, A. Golnik, E. Recknagel, M. Rossmanith, A. Weidinger, X. S. Chang, A. Kleinhammes, N. Rosov, J. Saylor, R. Schuhmann, L. Takacs, A. Teh, G. Zhang, C. Hohenemser and J. I. Budnick, "Hyperfine Interaction Studies of Antiferromagnetic Order in CuO ," *Phys. Rev. B* **38**, 2836 (1988).
168. Z. Tan, J. I. Budnick, Y. Zhang and B. Chamberland, " ^{139}La Nuclear Quadrupole Resonance Studies of Pure and Doped (Sr and Ni) La_2CuO_4 ," *Physica C* **156**, 137 (1988).
169. F. H. Sanchez, Y. D. Zhang, and J. I. Budnick, "Short-Range Order in a Partially Crystallized $\text{Fe}_{0.86}\text{B}_{0.14}$ Amorphous Alloy, a Comparison Between Spin-Echo NMR and Mössbauer-Effect Studies," *Phys. Rev. B* **38**, 8508 (1988).
170. Y. D. Zhang, J. I. Budnick, E. Potenziani, A. T. Pedziwatr, W. E. Wallace and P. Panisod, "NMR Study of Tetragonal $\text{Nd}_2\text{Fe}_{14}\text{B}$ and $\text{Nd}_2\text{Fe}_{14-x}\text{Co}_x$ Phase," *J. Appl. Phys.* **63**, 3719 (1988).
171. A. Weidinger, J. I. Budnick, B. Chamberland, A. Donlik, Ch. Niedermayer, E. Recknagel, M. Rossmanith and D. P. Yang, "Magnetic Ordering in High T_c -Related Compounds," *Physica C* **153-155**, 168 (1988).
172. A. Bianconi, J. I. Budnick, D. Demazeau, A. M. Flank, A. Fontaine, P. Lagarde, J. Jegoudez, A. Revcolevski, A. Marcelli, M. Verdaguer, "Cu L_3 X-Ray Absorption of Formally Trivalent Cu Compounds," *Physica C* **153-155**, 117 (1988).
173. A. Bianconi, J. I. Budnick, B. Chamberland, A. Clozza, E. Dartyge, G. Demazeau, M. Desantis, A. M. Flank, A. Fontaine, J. Jegoudez, P. Lagarde, L. L. Lynds, C. Michel, F. A. Otter, H. Tolentino, B. Raveau, and Revcolevski, " $3d^9$ States Induced by Doping in $\text{La}_{1.85}\text{Sr}_{0.15}\text{CuO}_4$ and in Magnetic and Non Magnetic $\text{M}_1\text{Ba}_2\text{Cu}_3\text{O}_7$ (M = Gd, Ho, and Y)," *Physica C* **153-155**, 113 (1988).
174. A. Golnik, J. I. Budnick, B. Chamberland, L. Lynds, C. H. Niedermayer, F. A. Otter, E. Recknagel, M. Rossmanith, A. Weidinger and Z. Tan, "Magnetic Ordering in Oxygen-Depleted $\text{YBa}_2\text{Cu}_3\text{O}_x$ and $\text{GdBa}_2\text{Cu}_3\text{O}_x$," *Physica C* **153-155**, 166-167 (1988).
175. B. R. Weinberger, L. Lynds, D. M. Potrepka, D. B. Snow, C. T. Burila, H. E. Eaton, Jr., R. Cipolli, Z. Tan and J. I. Budnick, "Y-Ba-Cu-O / Silver Composites, an Experimental Study of Microstructure and Superconductivity," *Physica C* **161**, 91 (1989).

176. Z. Tan, J. I. Budnick, B. Chamberland, and G. Tourillon, "Phase Decomposition in Nominal La_xCuO_4 ($x = 2.00$) Determined by Extended X-Ray Absorption Fine Structure," *Physica C* **160**, 571 (1989).
177. Z. Tan, J. I. Budnick, F. H. Sanchez, G. Tourillon, F. Namavar, and H. C. Hayden, "Silicide Structure Evolution in High Dose Cobalt Implanted Si(100) Crystals," *Phys. Rev. B* **40**, 6368 (1989).
178. Z. Tan, J. I. Budnick, S. M. Heald, "Structural Parameter Determination in Fluorescence EXAFS of Concentrated Samples. *Rev. Sci. Instrum.* **60**, 1021 (1989).
179. D. M. Pease, D. L. Brewster, Z. Tan, J. I. Budnick and C. C. Law, "Accurate X-Ray Absorption Spectra Obtained from Concentrated Bulk Samples by Fluorescence Detection," *Phys. Lett. A* **138**, 230 (1989).
180. A. Weidinger, Ch. Niedermayer, A. Golnik, R. Simon, E. Recknagel, J. I. Budnick, B. Chamberland and C. Baines, "Observation of Magnetic Ordering in Superconducting $\text{La}_{2-x}\text{Sr}_x\text{Cu}_4$ by Muon Spin Rotation," *Phys. Rev. Lett.* **62**, 102 (1989).
181. Y. D. Zhang, J. I. Budnick, D. P. Yang, E. Potenziani, Ii, A. T. Pedziwiatr, W. E. Wallace and M. Sagawa, "Magnetic Field Dependence of ^{11}B and ^{57}Fe NMR in $\text{Nd}_2\text{Fe}_{14}\text{B}$ Compounds," *J. Mag. Mat.* **79**, 136 (1989).
182. F. H. Sanchez, Y. D. Zhang, J. I. Budnick and R. Hasegawa, "Mössbauer Study of the Crystallization of $\text{Fe}_{100-x}\text{B}_x$ Amorphous Alloys ($14 \leq x \leq 25$)," *J. Appl. Phys.* **66**, 1671 (1989).
183. Ch. Niedermayer, H. Gluckler, R. Simon, A. Golnik, M. Rauer, E. Recknagel, A. Weidinger, J. I. Budnick, W. Paulus and R. Schollhorn, "Magnetic Ordering Induced by Hydrogen Doping in $\text{YBa}_2\text{Cu}_3\text{O}_7$," *Phys. Rev. B* **40**, 11386 (1989).
184. J. Saylor, L. Takacs, C. Hohenemser, J. I. Budnick, and B. L. Chamberland, "Neel Temperature of Stoichiometric La_2CuO_4 ," *Phys. Rev. B* **40**, 6854 (1989).
185. Z. Tan, J. I. Budnick, Y. Bruynseraede, W. Sevenhans, S. M. Heald and J. M. Tranquada, "Ion-Beam Induced Reactions at the Al/Nb Interface - a Glancing Angle EXAFS Study," *Physica B* **158**, 686 (1989).
186. Z. Tan, J. I. Budnick, G. Tourillon, J. L. Peng, L. Zhang, R. N. Shelton, "X-Ray Absorption Studies of Atomic and Electronic Structures of $\text{Nd}_{2-x}\text{M}_x\text{CuO}_4$ ($M = \text{Ce}$ and Th)," *Physica B*, (1989).
187. Z. Tan, J. I. Budnick, F. Sanchez, G. Tourillon, F. Namavar, H. C. Hayden and A. Fasihuddin, "EXAFS Studies of Cobalt Silicide Formation Produced by High Dose Ion Implantation," *Mater. Res. Soc. Symp. Proc.* **143**, 145 (1989).
188. M. Choi, D. M. Pease, G. H. Hayes and J. Wong, "Method of Obtaining the Empirical Scattering Parameters for the Fe-B Pair from the Extended X-Ray Absorption Fine Structure Data of Fe_2B , Possible Limitations. *Phys. Rev. B* 9654 (1990).
189. Z. Tan, W. Q. Chen, D. L. Brewster, S. W. Cheong, A. S. Cooper and L. W. Rupp, "Observation of Lanthanum and Rare Earthsite Ordering in the T^* -Phase $\text{La}_{2-x}\text{R}_x\text{Sr}_y\text{CuO}_4$ - ($R = \text{M}, \text{Eu}, \text{Gd}$ and Tb)," *Phys. Rev. B. Rapid Comm.* **42**, 4808 (1990).
190. Z. Tan, C. E. Bouldin, J. C. Wojcik, S. W. Cheong, A. S. Cooper, G. P. Espinosa, Z. Fisk, "Polarization X-Ray Absorption Near-Edge Structure Studies of $\text{Pr}_{2-x}\text{Ce}_x\text{O}_4$ Single Crystals, the Nature of Ce Doping," *Phys. Rev. B* **42**, 1037 (1990).

191. Z. Tan and J. I. Budnick, Reply to Comment, "Strontium Induced Oxygen Defect Structure and Hole Doping in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$," Phys. Rev. Lett. **65**, 3456 (1990).
192. Z. Tan, J. I. Budnick, J. L. Peng, L. Zhang and R. N. Shelton, "X-Ray Absorption Studies of Atomic and Electronic Structures of $\text{Nd}_{2-x}\text{M}_x\text{CuO}_4$ (M=Ce and Th)," Physica B **163**, 13-16 (1990).
193. M. E. Filipkowski, J. I. Budnick and Z. Tan, "Observation of a Low Temperature Magnetic Phase Transition in Nonsuperconducting $\text{La}_{2-x}\text{Sr}_x\text{CuO}_{4+y}$ by Macroscopic Magnetization and Electron Spin Resonance," Physica C **167**, 35-41 (1990).
194. J. I. Budnick, M. E. Filipkowski, Z. Tan, Ch. Niedermayer, H. Gluckler, A. Weidinger and E. Recknagel, "Muon Spin Rotation Studies of Local Magnetism in Magnetic and Superconducting Systems Based on the High Tc Copper Oxide Structures," Hyperfine Interactions **61**, 1017-1034 (1990).
195. Z. Tan, J. I. Budnick, C. E. Bouldin, J. C. Wojcik, S. W. Cheong, A. S. Cooper, G. P. Espinosa and G. Fisk, "Polarization X-Ray Absorption Near-Edge Structure Study of $\text{Pr}_{2-x}\text{Ce}_x\text{CuO}_4$ Single Crystals, the Nature of Ce Doping," Phys. Rev. B **42**, 1, p. 1037 (1990).
196. Z. Tan, M. E. Filipkowski, J. I. Budnick, E. K. Heller, D. L. Brewster, B. L. Chamberland, C. E. Bouldin, J. C. Wojcik and D. Shi, "Strontium-Induced Oxygen Defect Structure and Hole Doping in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$," Phys. Rev. Lett. **64**, 22, p. 2715 (1990).
197. Z. Tan, M. E. Filipkowski, J. I. Budnick, et.al., "Strontium-Induced Oxygen Defect Structure and Hole Doping in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$," Phys. Rev. Lett. **64**, 7715- 7718 (1990).
198. M. E. Filipkowski, J. I. Budnick and Z. Tan, "Observation of a Low Temperature Magnetic Phase Transition in Nonsuperconducting $\text{La}_{2-x}\text{Sr}_x\text{CuO}_{4+y}$ by Macroscopic Magnetization and Electron Resonance, Physica C **167**, 35-41 (1990).
199. H. Gluckler, Ch. Niedermayer, G. Nowitzke, E. Recknagel, A. Weidinger and J. I. Budnick, "Effect of Hydrogen in $\text{YBa}_2\text{Cu}_3\text{O}_7$ Studied with the Muon Spin Rotation Technique," J. Less. Comm. Metals **164-165**, 1016 (1990).
200. Z. Tan, J. I. Budnick, W. Q. Chen, B. R. Weinberger and L. Lynds, "X-Ray Absorption Studies of Vanadium-Containing $\text{YBa}_2\text{Cu}_3\text{O}_7$," Mater. Res. Soc. Symp. Proc. (1990).
201. J. I. Budnick, M. E. Filipkowski, Z. Tan, B. Chamberland, Ch. Niedermayer, A. A. Weidinger, A. Golnik, R. Simon, M. Rauer and C. Baines, "Muon Spin Rotation Studies of Magnetic Order and Strong Magnetic Correlations in Magnetic and Superconducting Systems Based on the High Tc Copper Oxide Structures," Intl. Sem. on High Temperature Superconductivity, Dubna, USSR, World Scientific Publishing, p. 172-202, (1990).
202. J. Saylor, C. Hohenemser, M. E. Filipkowski and J. I. Budnick, "The Magnetic Phase Diagram of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_{4+y}$ Observed Via ^{111}In ," PAC Hyperfine Interactions **61**, p. 1067-1072 (1990).
203. Z. Tan, J. I. Budnick, W. Q. Chen, B. R. Weinberger and L. Lynds, "X-Ray Absorption Studies of Vanadium-Containing $\text{YBa}_2\text{Cu}_3\text{O}_7$," Mat. Res. Soc. Symp. Proc. **169**, p. 229 (1990).
204. X. S. Ling, M. E. Filipkowski, E. K. Heller, J. I. Budnick, "AC Susceptibility Studies of the High Tc Superconductors, Dissipative Effects in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_{4+y}$ and $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$ Systems," Mat. Res. Soc. Symp. Proc. **169**, p. 947 (1990).

205. Z. Tan, J. I. Budnick, W. Q. Chen, D. L. Brews, S.-W. Cheong, A. S. Cooper and L. W. Rupp, Jr., "Observation of Lanthanum- and Rare-Earth-Site Ordering in T^* -Phase $\text{La}_{2-x-y}\text{R}_x\text{Sr}_y\text{CuO}_4$ ($R = \text{Sm, Eu, Gd, Tb}$)," *Phys. Rev. B* **42**, 4808 (1990?).
206. Z. Tan, J. I. Budnick, C. E. Boulding, J. C. Wojcik, S.-W. Cheong, A. S. Cooper, and G. P. Espinosa, "Polarization X-Ray-Absorption Near-Edge Structure Study of $\text{Pr}_{2-x}\text{Ce}_x\text{CuO}_4$ Single Crystals, the Nature of Ce Doping," *Phys. Rev. B* **43**, 1037 (1990?).
207. Z. Tan, D. M. Pease and F. Namavar, "X-Ray Absorption Studies of Krypton Precipitates in Solid Matrices," *Phys. Rev. B* **43**, 1987 (1991).
208. Z. Tan, S. Heald, S. W. Cheng, H. Y. Huang, A. S. Cooper and J. I. Budnick, "Cation Ordering and Oxygen Stoichiometry in $\text{LaR}_x\text{Sr}_{2-x}\text{Cu}_2\text{O}_{6+x}$ ($R=\text{La, Nd, Pr, Sm, and Ga}$)," *Physica C* **184**, 229-234 (1991).
209. J. I. Budnick, X. S. Ling and D. Shi, "Self Organized Critical State in High T_c Superconductors," *Physica C* **2181**, 185-89 (1991).
210. A. Weidinger, C. H. Niedermayer, H. Gluckler, A. Golnik, G. Nowitzke, E. Recknagel, H. Eickenbusch, W. Paulus, R. Schollhorn and J. I. Budnick, "Local Magnetism in Superconducting $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$," *Hyperfine Interactions Vol. 64*, 147 (1991).
211. H. Gluckler, C. H. Niedermayer, G. Nowitzke, A. Golnik, R. Simon, E. Recknagel, A. Weidinger, J. Erxmeyer and J. I. Budnick, "A Muon Spin Rotation Study of Hydrogen in $\text{YBa}_2\text{Cu}_3\text{O}_y$," *Hyperfine Interactions. Vol. 64*, 155 (1991).
212. J. J. Jia, T. A. Callcott, J. I. Budnick, et.al., "A Soft X-Ray Emission Investigation of Cobalt Implanted Silicon Crystals," *J. Appl. Phys.* **69**, 7800 (1991).
213. Ch. Niedermayer, A. Golnik, E. Recknagel, A. A. Weidinger, A. Yaouanc, P. L'heritier, D. Fruchart, J. I. Budnick, and K. H. J. Buschow, "Positive Muon Spectroscopy of $\text{R}_2\text{Fe}_{14}\text{B}$," *Hyperfine Interactions* **64**, 405 (1991).
214. D. Shi, X. S. Ling, M. Xu, M. M. Fang, S. Luo, B. Dabrowski, D. G. Hinks, D. R. Richardson and Y. Zhang, "Irreversibility in $\text{Ba}_{0.625}\text{K}_{0.375}\text{BiO}_3$," *Phys. Rev. B* **43**, 3684 (1991).
215. J. I. Budnick, Y. D. Zhang, J. C. Ford and W. A. Hines, "Some Applications of NMR to the Study of Magnetically Ordered Materials with Emphasis on the Short Range Order in (Fe-B) Based Crystalline and Amorphous Alloys," *J. Mag. Mag. Mat.*, **100**, 13 (1991).
216. M. Choi, J. I. Budnick, D. M. Pease, G. H. Hayes and S. M. Heald, "Thermal Variation of the Mean-Square Relative Displacement for the Pt-Pt Pair in the $\text{Ni}_{10}\text{Pt}_{90}$ Random Solid-Solution Alloy," *Phys. Rev. B* **44**, 9319 (1991).
217. X. S. Ling, D. Shi and J. I. Budnick, "Self Organized Critical State in High T_c Superconductors," *Physica C*, **185-189**, 2181 (1991).
218. Z. Tan, S. Luo, W. Q. Chen, S. W. Cheong, A. S. Cooper and J. I. Budnick, "X-Ray Absorption Studies of Cation Ordering and Valence in the T^* Phase in $\text{Ln}_{2-x-y}\text{R}_x\text{Sr}_y\text{CuO}_4$ ($R = \text{Sm, Eu, Gd, Tb and Dy}$)," *Phys. Rev. B* **44**, 7008 (1991).
219. M. Wojcik, Y. Zhang and J. I. Budnick, "Some Nuclear Magnetic Resonance Results on Nd-Fe-B Phases in Supermagnets-Hard Magnetic Material," *NATO Advanced Study Institute Kluwer AC Publishers, Chap. 12*, p. 283-315 (1991).

220. Z. Tan, J. I. Budnick, D. M. Pease and F. Namavar, "X-Ray Absorption Studies of Krypton Precipitates in Solid Matrices," *Phys. Rev. B* **43**, p. 1987 (1991).
221. J. J. Jia, T. A. Callcott, W. L. O'Brien, Q. Y. Dong, D. R. Mueller, J.-E. Rubensson, D. L. Ederer, Z. Tan, F. Namavar and J. I. Budnick, "A Soft X-Ray Emission Investigation of Cobalt Implanted Silicon Crystals," *J. Appl. Phys.* **69**, p. 7800 (1991).
222. X. S. Ling and J. I. Budnick, "AC Susceptibility Studies of Type II Superconductors, Vortex Dynamics," *Proceedings of Coolfont Meeting on AC Susceptibility in High T_c Superconductors, Magnetic Susceptibility of Superconductors and Other Spin Systems*, edited by R. B. Hein et al., Plenum, New York, 1991, pp.377-388.
223. Z. Tan, F. Namavar, J. I. Budnick, F. H. Sanchez, A. Fasihuddin, S. M. Heald, C. E. Bouldin and J. C. Wojcik, "Silicide Formation and Structural Evolution in Fe-, Co-, and Ni-Implanted Silicon. *Phys. Rev. B* **46**, 4077 (1992).
224. Z. Zhang, Y. D. Zhang, W. A. Hines, J. I. Budnick and W. M. H. Sachtler, "Size and Location of Cobalt Clusters in Zeolite NaY, A Nuclear Magnetic Resonance Study," *J. Am. Chem. Soc.* **114**, 4845 (1992).
225. D. L. Brewster, C. E. Bouldin, D. M. Pease, J. I. Budnick, and Z. Tan, "Silicon Photodiode Detector for Glancing Emergent Angle EXAFS Technique," *Rev. Sci. Instr.* **63**, 3298 (1992).
226. Z. Tan, S. M. Heald, J. I. Budnick, et.al., "Rare-Earth Valence and Doping in T-, T', and T* -Phase R₂CuO₄ (R=Rare Earths)," *Phys. Rev. B* **45**, 2593 (1992).
227. J. I. Budnick, S. A. Ge, M. X. Mao, G. L. Chen, Z. A. Chen, C. L. Zhang, Y. Zhang and W. A. Hines, "Effects of Short Range Order in the Magnetic Properties of Fe-B-C Amorphous Alloys, NMR and Magnetization Measurements," *Phys. Rev. B* **45**, 4695 (1992).
228. Z. Tan, F. Namavar, S. M. Heald, J. I. Budnick and F. H. Sanchez, "Silicide Formation in High Dose Fe-Implanted Silicon," *Mat. Res. Soc. Proc.* **235**, 267 (1992).
229. S. A. Ge, M. X. Mao, G. L. Chen, Z. A. Chen, C. L. Zhang, Y. Zhang, W. A. Hines and J. I. Budnick, "Effects on Short Range Order in the Magnetic Properties of Fe-B-C," Amorphous Alloys, NMR and Magnetization Measurements, *Phys Rev. B* **45**, 4695 (1992).
230. Z. Tan, F. Namavar, S. M. Heald and J. I. Budnick, "Sequential-Ion-Implantation Synthesis of Ternary Metal Silicides," *Appl. Phys. Lett.* **63**, 791-793 (1993).
231. Ch. Niedermayer, H. Gluckler, A. Golnik, U. Binniger, M. Rauer, E. Recknagel, J. I. Budnick and A. Weidinger, "Simultaneous Magnetic Ordering of the Gd and Cu Subsystems in Oxygen-Deficient GdBa₂Cu₃O_{6+x}," *Phys. Rev. B* **47**, 3427-3430 (1993).
232. Ch. Neidermayer, I. D. Reid, E. Roduner, E. J. Ansaldo, C. Bernhard, U. Binniger, H. Gluckler, E. Recknagel, J. I. Budnick and A. Weidinger, "Simultaneous Observation of Muonium and Multiple Free Radicals in Muon-Implanted C₇₀," *Phys. Rev. B* **47**, 10923-10926 (1993).
233. D. B. Fenner, Q. Li, W. D. Hamblen, M. E. Johansson, D. G. Hamblen, L. Lynds and J. I. Budnick, "Optical and Thermal Performance Advantages for Silicon Substrates in YBCO Bolometer Devices," *IEEE Trans. Appl. Supercond.* **3**, 2104- 2106 (1993).

234. Ch. Neidermayer, C. Bernhard, U. Binniger, H. Gluckler, J. L. Tallon, E. J. Ansaldo and J. I. Budnick, "Muon Spin Rotation Study of the Correlation Between Tc and Ns/M* in Overdoped Tl₂Ba₂CuO_{6+x}," *Phys. Rev. Lett.* **71**, 1764 (1993).
235. T. D. Xiao, Y. D. Zhang, P. R. Strutt, J. I. Budnick, K. Mohan and K. E. Gonsalves, "Synthesis of Fe_xN/Bn Magnetic Nanocomposite via Chemical Processing," *Nanostructured Materials* **2**(3) 285-293 (1993).
236. K. E. Gonsalves, G. M. Chow, Y. D. Zhang, J. I. Budnick and T. D. Xiao, "Iron Nitride/Boron Nitride Magnetic Nanocomposite Powders," *Advanced Materials* **6**, 291 (1994).
237. S. A. Ge, G. L. Chen, M. C. Mao, D. S. Xue, C. X. Li, F. S. Li, Y. D. Zhang, W. A. Hines and J. I. Budnick, "On the Short Range Order in the Fe₈₄B₁₀C₆ Amorphous Alloy," *J. Mag. Mag. Mat.* **129**, 207-212 (1994).
238. M. X. Mao, S. H. Ge, Z. H. Chen, G. L. Chen, C. L. Zhang, Y. D. Zhang, W. A. Hines and J. I. Budnick, "Development of Short Range Order in Fe-B-C Amorphous Alloys with Thermal Treatment, an NMR Study," *J. Mag. Mag. Mat.* **138**, 301 (1994).
239. P. Chartier, M. Balasubramanian, D. L. Brewster, T. Manzur, D. M. Pease, J. I. Budnick, L. Huang, C. C. Law, S. M. Russell and C. W. Kemball, "Site Selectivity in Fe-doped β-Phase NiAl," *J. Appl. Phys.* **75**, 3842 (1994).
240. M. Balasubramanian, Y. D. Zhang, J. I. Budnick, K. E. Gonsalves and T. D. Xiao, "Studies on Nanostructured M50 Type Steel Using X-Ray Absorption Spectroscopy and NMR," *Mat. Res. Soc. Symp. Proc.* **351**, 196 (1994).
241. E. H. Jordan, S. C. U. Ochi, D. M. Pease, J. I. Budnick, "Micro Radiographic Strain Measurements Using Markers," *Expt. Mechanics* **155** (1994).
242. Y. D. Zhang, W. A. Hines, J. I. Budnick, Z. Zhang, W. M. H. Sachtler, "NMR Study of the Magnetic Behavior of Ultrafine Co Clusters in Zeolite NaY," *J. Appl. Phys.* **76**, 6576 (1994).
243. D. L. Brewster, D. M. Pease, J. I. Budnick, "Corrections of Residual Fluorescence Distortions for a Glancing-Emergence Angle X-Ray - Absorption Technique," *Phys. Rev. B* **50** 9025 (1994).
244. D. B. Fenner, Q. Li, W. D. Hamblen, J. Luo, D. G. Hamblen and J. I. Budnick, "Epitaxial Hts Bolometers on Silicon for Ir Detection. Soc. Photo. Instrum. Eng. (SPIE) Tech. Conference , Los Angeles, Proceedings **2159**, p.10-20 (1994).
245. Y. D. Zhang, J. I. Budnick, D. P. Yang, G. W. Fernando, W. A. Hines, T. D. Yiao, T. Manzur, "Nitrogen Diffusion and Distribution in the Y₂Fe₁₇," *Phys. Rev. B* **51**, 12091 (1995).
246. Y. D. Zhang, J. I. Budnick, N. X. Shen, W. A. Hines, G. W. Fernando, T. Manzur, "NMR Study of Y₂Fe₁₇ Nitrides," *J. Mag. Mag. Mat.* **140**, 987 (1995).
247. M. Balasubramanian, Y. D. Zhang, J. I. Budnick, D. M. Pease, "Local Environment of Fe in Nano Structured M50 Type Steel Samples," *Nano Structured Materials* **3**, 249 (1995).
248. Y. D. Zhang, D. P. Yang, J. I. Budnick, W. A. Hines, W. Q. Xu, N. X. Shen, D. M. Pease, W. G. Fernando, "On the Nitrogen Occupation in the Y₂Fe₁₇ Lattice," *Scripta Metallurgica* **33**, 1817 (1995).

249. Ch. Niedermayer, Ch. Bernhard, J. I. Budnick, "Muon Spin Rotation Studies of Doping in High-Tc-Superconductors," *J. Mag. Mag. Mat.* **140-144**, 1287 (1995).
250. H. Gluckler, Ch. Niedermayer, Ch. Bernhard, U. Binniger, E. Recknagel, J. L. Tallon, J. I. Budnick, "Muon Spin Rotation Study of Antiferromagnetic Order in Hydrogenated $\text{YBa}_2\text{Cu}_4\text{O}_8$, Evidence for A Local Structural Change in the Vicinity of Tc," *Physica C* **242** 39 (1995).
251. Y. D. Zhang, J. I. Budnick, W. A. Hines, N. X. Shen, T. D. Xiao, T. Manzur, "Nitrogen Location in R_2Fe_{17} Compounds, an NMR Study," *J. Mag. Mag. Mat.* **145**, L11 (1995).
252. M. Balasubramanian, D. M. Pease, J. I. Budnick, T. Manzur, D. L. Brews, "Site Occupation Tendencies for Ternary Additions (Fe, Cu, Ni) in β -Phase Transition Metal Aluminides," *Phys. Rev. B* **51**, 8702 (1995).
253. J. L. Tallon, C. Bernhard, U. Binniger, A. Hofer, G. V. M. Williams, E. J. Ansaldo, J. I. Budnick, Ch. Niedermayer, "In-Plane Anisotropy of the Penetration Depth Due to Superconductivity on the Cu-O Chains in $\text{YBa}_2\text{Cu}_3\text{O}_{7-8}$, $\text{Y}_2\text{Ba}_4\text{Cu}_7\text{O}_{5-8}$ and $\text{YBa}_2\text{Cu}_4\text{O}_8$," *Phys. Rev. Lett.* **74**, 1008 (1995).
254. M. Balasubramanian, D. M. Pease, T. Manzur and D. L. Brews, "Local Environment of Transition Metal Ternary Dopants in β -Phase Transition Metal Aluminides," *Physica B* **208-209** 493 (1995).
255. D. B. Fenner, R. M. Carangelo, D. G. Hamblen, P. J. Kung and J. I. Budnick, "Infrared Bolometer and Silicon-Etalon Arrays for Transform Spectrometer on a-Chip. European Conf. on Appl. Supercond. (Eucas '95). I.O.P. Conference Series #148 Proceedings **2** p. 1231-1234 (1995?).
256. S. H. Hong, J. R. Miller, Q. Y. Ma, E. S. Yang, D. B. Fenner, C. Y. Yang and J. I. Budnick, "Modification of Epitaxial Oxide Films with Ion Implantation," *Mat. Res. Soc. Symp. Proc.* **401**, p. 309-314 (1996).
257. D. B. Fenner, J. I. Budnick, D. M. Potrepka, Q. Li, P. A. Rosenthal, J. Luo and W. D. Hamblen, "HTS Flux Flow Channels on Silicon Wafers," *Appl. Supercond.* **5**, p. 3397-3400, (1995).
258. P. J. Kung, D. B. Fenner, D. M. Potrepka and J. I. Budnick, "Growth and Characterization of Magnetoresistive La-Ca-Mn-O Films on Si(100) and Si(111) Substrates," *Appl. Phys. Lett.* **69**, 427 (1996).
259. F. Galasso, D. B. Fenner, L. Lynds, C. E. Rossman, D. M. Potrepka, J. I. Budnick and L. G. Carreiro, "An Assessment of Synthesis Effects on the High-Tc Superconducting Transition, with Application to Thin Film Bolometer Devices," *Appl. Supercond.* **4**, 117-133 (1996).
260. C. Bernhard, Ch. Niedermayer, U. Binniger, A. Hofer, Ch. Wenger, J. L. Tallon, G. V. M. Williams, E. J. Ansaldo, J. I. Budnick, C. E. Stronach, D. R. Noakes and M. A. Blanksun-Mills, "Magnetic Penetration Depth and Condensate Density of Cuprate High-Tc Superconductors Determined by Muon Spin Rotation Experiments," *Phys. Rev B* **52**, 10488-10498 (1995).
261. D. Haskel, E. A. Stern, D. G. Hinks, A. W. Mitchell, J. D. Jorgensen and J. I. Budnick, "Dopant and Temperature Induced Structural Phase Transitions in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$," *Phys. Rev. Lett.* **76**, 439 (1996).

262. Y. D. Zhang, J. I. Budnick, W. A. Hines and D. P. Yang, "Nitrogen Diffusion Mechanism in the R_2Fe_{17} Lattice," *Appl. Phys. Lett.* **67**, 208 (1995).
263. Y. D. Zhang, J. I. Budnick and W. A. Hines, "Applications of Nuclear Magnetic Resonance in the Study of Magnetic Materials," *Proc. of the 8th Chinese International Summer School of Physics, Workshop on Modern Magnetism, Beijing, Aug. 28 - Sept. 7, 1995.* published by World Scientific Publishing Co., Singapore (1996).
264. Y. D. Zhang, J. I. Budnick, W. A. Hines and D. P. Yang, "Study of the Nitrogen Diffusion Mechanism in R_2Fe_{17} ," *J. Appl. Phys.* **79**, 4596 (1996).
265. N. X. Shen, Y. D. Zhang, J. I. Budnick, W. A. Hines and U. Binniger, "NMR Study of R_2Fe_{17} ($R = Y, Sm, \text{ and } Gd$) Hydrides," *J. Appl Phys.* **79**, 5530 (1996).
266. N. X. Shen, Y. D. Zhang, J. I. Budnick, and W. A. Hines, "X-Ray Diffraction and Magnetization Studies of Sm_2Fe_{17} and Its Nitrides," *J. Mag. Mag. Mat.* **162**, 265 (1996).
267. Y. D. Zhang, J. I. Budnick, W. A. Hines, M. Q. Huang and W. E. Wallace, "Giant Moment of $Fe_{16}N_2$ as Evidenced by ^{57}Fe NMR Studies," *Phys. Rev.* **B54**, 51 (1996).
268. N. X. Shen, Y. D. Zhang, J. I. Budnick, W. A. Hines, R. Lyver and K. H. J. Buschow, "X-Ray Diffraction and NMR Studies of Y_2Fe_{17} ," *Appl. Phys. Letters* **69**, 3197 (1996).
269. A. Golnik, Ch. Niedermayer, Ch. Bernard and J. I. Budnick, "Muon Spin Rotation Studies of Magnetic Correlations in High Tc Superconductors," *Proc. of First Polish U.S. Symp. on High Tc Superconductors, Lecture Notes in Physics, Springer-Verlag* **V475**, (1996).
270. Y. D. Zhang, and J. I. Budnick, "Dynamic Alignment of Magnetic Materials," *Appl. Phys. Lett.* **70**, 1083 (1997).
271. Y. D. Zhang, J. I. Budnick, W. A. Hines, N. X. Shen and G. W. Fernando, "Diffusion Mechanism of Nitrogen in the R_2Fe_{17} Lattice, a Trapping Diffusion Process," *J. Phys. Cond. Mat.* **9**, 1201 (1997).
272. Y. D. Zhang, N. X. Shen, J. I. Budnick and W. A. Hines, "Specific Fe Site Moment Enhancement in Y_2Fe_{17} upon Nitrogen Insertion," *J. Appl. Phys.* **81**, 4566 (1997).
273. D. P. Yang, Y. D. Zhang, W. A. Hines and J. I. Budnick, "A Theoretical Model for Nitrogen Diffusion in Y_2Fe_{17} ," *J. Appl. Phys.* **81**, 4554 (1997).
274. Y. D. Zhang, J. I. Budnick and W. A. Hines, "Three Dimensional Alignment of Magnetic Particles," *J. Appl. Phys.* **81**, 5647 (1997).
275. C. E. Rossman, J. I. Budnick and B. R. Weinberger, "Correlation of Frictional Losses of Spinning Levitated Magnets with AC Susceptibility in High Temperature Superconductors," *Appl. Phys. Lett.* **70**, 255 (1997).
276. G. Davies, A. Fataftah, A. Cherkasskiy, E. A. Ghabbour, S. A. Jansen, S. Kolla, M. D. Paciolla, L. T. Sein, Jr., W. Buermann, M. Balasubramanian, J. I. Budnick and B. Xing, "Tight Metal Binding by Humic Acids and Its Role in Biomineralisation," *J. Chem. Soc. Dalton.*, 4047-4060 (1997).
277. D. L. Brewster, D. M. Pease and J. I. Budnick, "Temperature Dependent Vibrational Properties of $NiAl$, $CoAl$ and $FeAl$, β -Phase Alloys," *Phys. Rev. B* **56** (18), 11, 449 (1997).

278. S. C. Tidrow, A. Tauber, W. D. Wilber, R. T. Lareau, C. D. Brandle, G. W. Berkstresser, A. J. Ven Graitis, D. M. Potrepka, J. I. Budnick, J. Z. Wu, "New Substrates for HTSC Microwave Devices," *IEEE Trans. Appl. Supercond.* **7**, 1766 (1997).
279. C. Rodríguez Torres, M. Fernández Van Raap, F. H. Sánchez, L. Mendoza Zélis, Y. D. Zhang, J. I. Budnick and N. X. Shen, "A Mössbauer Study of $\text{Sm}_2\text{Fe}_{17}$ Nitrides," *Hyperfine Interactions C* **2**, 193 (1997).
280. Y. D. Zhang, J. I. Budnick, W. A. Hines, C. L. Chien and J. Q. Ziao, "Effect of Magnetic Field on the Superparamagnetic Relaxation in Granular Co-Ag Samples," *Appl. Phys. Lett.* **72**, 2053 (1998).
281. Ch. Niedermayer, Ch. Bernhard, T. Blasius, A. Golnik, A. Moodenbaugh and J. I. Budnick, "A Common Phase Diagram for Antiferromagnetism in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ and $\text{Y}_{1-x}\text{Ca}_x\text{Ba}_2\text{Cu}_3\text{O}_6$ as Seen by Muon Spin Rotation," *Phys. Rev. Lett.* **80**, 3843 (1998).
282. C. E. Rossman and J. I. Budnick, "Precession of Spinning Magnets Levitated Over High-Temperature Superconductors," *Physica C* **295**, 304-329 (1998).
283. S. C. Tidrow, A. Tauber, W. D. Wilber, R. T. Lareau, C. D. Brandle, G. W. Berkstresser, A. J. Ven Graitis, D. M. Potrepka, J. I. Budnick, J. Z. Wu, "New Substrates for HTSC Microwave Devices," *IEEE Trans. Appl. Supercond.* **7**, 1766 (1997).
284. Y. D. Zhang, J. I. Budnick, W. A. Hines, C. L. Chien and J. Q. Xiao, "Effect of Magnetic Field on the Superparamagnetic Relaxation in Granular Co-Ag Samples," *Appl. Phys. Lett.* **72**, 2053 (1998).
285. N. X. Shen, T. K. Daeubler, J. I. Budnick, W. A. Hines, Y. D. Zhang, D. P. Yang, B. G. Shen and Z. H. Cheng, "X-ray Diffraction, Magnetization and Nuclear Magnetic Resonance Study of Y Fe Ga," *J. Phys.: Cond. Matter* **10** 7133 (1998).
286. D. M. Potrepka, J. I. Budnick, D. B. Fenner, M. Balasubramanian, W. A. Hines, "Local Cu and Br Environments and Their Relationship to Superconductivity Restoration in Brominated $\text{YBa}_2\text{Cu}_3\text{O}_{6.1}$," *Appl. Phys. Lett.* **73**, 1137 (1998).
287. N. X. Shen, J. I. Budnick, W. A. Hines, Y. D. Zhang and Y. G. Duan, "Structural and Magnetic Properties of Ammonia-Nitrided Y_2Fe_{17} ," *J. Phys. Cond. Matter* **11**, 833-845 (1999).
288. Y. D. Zhang, J. I. Budnick, W. A. Hines, B. G. Shen and Z. H. Cheng, "Effect of Ga Substitution on the Sm-Sublattice Anisotropy in $\text{Sm}_2\text{Fe}_{17-x}\text{Ga}_x$ ($x=0$ to 8)," *J. Appl. Phys.* **85**, 4663 (1999).
289. D. P. Yang, J. I. Budnick, W. A. Hines and Y. D. Zhang, "A Mössbauer Spectroscopy Study of the Rhombohedral Phase $\text{Y}_2\text{Fe}_{17}\text{N}_x$ with Intermediate Nitrogen Content ($x = 0$ to 2.8)," *J. Appl. Phys.* **85**, 4651 (1999).
290. D. M. Potrepka, J. I. Budnick, D. B. Fenner, W. A. Hines, M. Balasubramanian and A. R. Moodenbaugh, "Role of Bromine in Restoring Superconductivity in $\text{YBa}_2\text{Cu}_3\text{O}_y$," *Phys. Rev. B* **60**, 10489 (1999).
291. Ch. Niedermayer, T. Blasius, Ch. Bernhard, A. Golnik, A. Moodenbaugh and J. I. Budnick, "Doping Dependence of the Antiferromagnetic Correlations in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ and $\text{Y}_{1-x}\text{Ca}_x\text{Ba}_2\text{Cu}_3\text{O}_6$," *Advances in Solid State Physics, Vieweg* **39**, 413 (1999).

292. C. Niedermayer, T. Blasius, C. Bernhard, A. Golnik, A. Moodenbaugh and J. I. Budnick, "Hole Doping Dependence of the Antiferromagnetic Correlations in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ and $\text{Y}_{1-x}\text{Ca}_x\text{Ba}_2\text{Cu}_3\text{O}_6$," AIP Conference Proceedings **483**, 292 (1999).
293. Y. D. Zhang, J. I. Budnick, W. A. Hines, S. A. Majetich and E. M. Kirkpatrick, "Microstructure and Magnetic Behavior of Carbon-Coated Co Nanoparticles Studied by Nuclear Magnetic Resonance," Appl. Phys. Lett. **76**, 94 (2000).
294. M. Daniel, J. I. Budnick, W. A. Hines, Y. D. Zhang, W. G. Clark and A. R. Moodenbaugh, "Nuclear Magnetic Resonance Study of Polycrystalline $\text{Sr}_{1-x}\text{Ca}_x\text{RuO}_3$ ($0 \leq x \leq 1.0$)," J. Phys.: Condens. Matter **12**, 3857 (2000).
295. D. M. Potrepka, J. I. Budnick, A. R. Moodenbaugh, D. A. Fischer and W. A. Hines, "Combined 63, 65Cu NQR and NMR Study of $\text{Y}_{1-x}\text{Ca}_x\text{Ba}_2\text{Cu}_3\text{O}_y$," Physica C **341-348** (2000).
296. M. Daniel, M. Balasubramanian, D. L. Brewster, M. Mehl, D. M. Pease and J. I. Budnick, "Site Selectivity and Bonding in the β Phase Aluminides: Studies of RuAl, PdAl, and Pd and Ru Dopants in NiAl," Phys. Rev. B **61**, 6637 (2000).
297. C. Niedermayer, T. Blasius, C. Bernhard, A. Golnik, A. Moodenbaugh and J. I. Budnick, "Muon Spin Rotation Studies of Doping in High-Tc Superconductors," Lecture Notes in Physics, Springer-Verlag **V475**, editors J. Klamut et al. (2000).
298. D. M. Pease, M. Daniel, J. I. Budnick, T. Rhodes, M. Hammes, D. M. Potrepka, K. Sills, C. Nelson, S. M. Heald, D. I. Brewster, A. Frenkel, I. Grigorieva and A. A. Antonov, "Log Spiral of Revolution Highly Oriented Pyrolytic Graphite Monochromator for Fluorescence X-Ray Absorption Edge Fine Structure," Rev. Sci. Instrum. **71**, p.3267-3273 (2000).
299. D. M. Pease, M. Daniel, J. I. Budnick, A. Frenkel and K. Pandya, "Log Spiral of Revolution Highly Oriented Graphite Monochromator for Fluorescence X-Ray Absorption Edge Fine Structure," National Synchrotron Light Source Science Highlights, NSLS Annual Report, (2000).
300. D. B. Fenner, J. Hautala, L. P. Allen, J. A. Greer and W. J. Skinner, "Smoothing Thin Films with Gas-Cluster Ion Beams," MRS Spring 2000 Meeting, San Francisco, CA, Mat. Res. Soc. Symp. Proc., **614** (2000)
301. D. B. Fenner, J. Hautala, L. P. Allen, T. G. Tetreault, A. Al-Jibouri, J. I. Budnick and K. S. Jones, "Surface Processing with Gas-Cluster Ions to Improve Giant Magnetoresistance Films," J. Vac. Sci. Technol. A **19** (4), (2001).
302. D. M. Pease, M. Daniel, J. I. Budnick, B. Taylor, A. Frenkel, K. Pandya, I. K. Grigorieva and A. A. Antonov, "Extension of a Tuned Log Spiral of Revolution Fluorescence XAFS Detector, Designed for Optimal Detection of a Particular Element Z, to XAFS of Elements Other Than Z," J. Synchrotron Rad. **8**, 336 (2001).
303. Y. D. Zhang, S. H. Wang, D. T. Xiao, J. I. Budnick and W. A. Hines, "Nanocomposite Co/SiO₂ Soft Magnetic Materials," IEEE Trans. Magnetics **37**, 2275, (2001).
304. Y. D. Zhang, W. A. Hines, J. I. Budnick, D. P. Yang, B. G. Shen and Z. H. Cheng, "Study of Spin-Reorientation in $\text{Tm}_2\text{Fe}_{17-x}\text{Ga}_x$ and $\text{Sm}_2\text{Fe}_{17-x}\text{Ga}_x$," IEEE Trans. Magnetics **37**, 2603 (2001).
305. D. M. Pease, A. Fasihuddin, M. Daniel and J. I. Budnick, "Method of Linearizing the 3d L₃/L₂ White Line Ratio as a Function of Magnetic Moment," Ultram. **88**, 1 (2001).

306. M. Z. Wu, Y. D. Zhang, S. Q. Hui, T. D. Xiao, S. H. Ge, W. A. Hines, J. I Budnick and G. W. Taylor, "Microwave Magnetic Properties of $\text{Co}_{50}/(\text{SiO}_2)_{50}$ Nanoparticles," *Appl Phys. Lett.* **80**, 4404 (2002).
307. M. Z. Wu, Y. D. Zhang, S. Q. Hui, T. D. Xiao, S. H. Ge, W. A. Hines and J. I Budnick, "Structure and Magnetic Properties of SiO_2 -Coated Nanoparticles," *J. Appl. Phys.* **92**, 491 (2002).
308. M. Z. Wu, Y. D. Zhang, S. Hui, T. D. Xiao, S. H. Ge, W. A. Hines, J. I Budnick and M. J. Yacaman, "Magnetic Properties of SiO_2 -Coated Nanoparticles," *J. Appl. Phys.* **92**, 6809 (2002).
309. S. Q. Hui, Y. D. Zhang, T. D. Xiao, M. Z. Wu, S. H. Ge, W. A. Hines, J. I. Budnick, M. J. Yacaman and H. E. Troiani, "Study of NiFe/SiO_2 Nanocomposites," *Proc. of the Materials Research Society* **703**, V1.6, p 19 (2002).
310. Z. T. Zhang, Y. D. Zhang, T. D. Xiao, S. H. Ge, M. Z. Wu, W. A. Hines, J. I. Budnick, J. M. Gromek, M. J. Yacaman and H. E. Troiani, "Nanostructured NiFe_2O_4 Soft Magnetic Ferrite," *Proc. of the Materials Research Society* **703**, V3.5, p 111 (2002).
311. S. Q. Hui, Y. D. Zhang, T. D. Xiao, M. Z. Wu, S. H. Ge, W. A. Hines, J. I. Budnick, M. J. Yacaman and H. E. Troiani, " Fe/SiO_2 Nanocomposite Soft Magnetic Materials," *Proc. of the Materials Research Society* **703**, V6.3, p 237 (2002)
312. Z. H. Han, J. I. Budnick, M. Daniel, W. A. Hines, D. M. Pease, P. W. Klamut, B. Dabrowski, S. M. Mini, M. Maxwell, C. W. Kimball, "Nuclear Magnetic Resonance and Magnetization Studies of the Ferromagnetic Ordering Temperature Suppression in Ru Deficient SrRuO_3 ," *Physica C* **387**, 256 (2003).
313. Z. H. Han, J. I. Budnick, M. Daniel, W. A. Hines, D. M. Pease, P. W. Klamut, B. Dabrowski, S. M. Mini, M. Maxwell, C. W. Kimball, "Local Studies of the Ferromagnetic Ordering Temperature Suppression in SrRuO_3 ," *Acta Physica Polonica B* **34**, 1571 (2003).
314. Y. D. Zhang, X. Q. Ma, S. Q. Hui, M. Z. Wu, S. H. Ge, W. A. Hines, J. I. Budnick, B. M. Cetegen and S. Y. Semenov, "Structure and Magnetic Properties of NiFe/SiO_2 and Co/SiO_2 Nanocomposites Consolidated by Detonation Compaction," *J. Appl. Phys.* **93**, 6969 (2003). (Proc. 47th Conf. on Magnetism and Magnetic Materials, November 11-15, 2002, Tampa, FL.)
315. S. Q. Hui, M. Z. Wu, S. H. Ge, D. J. Yan, Y. D. Zhang, T. D. Xiao, M. J. Yacaman, M. Mika-Yoshida, W. A. Hines and J. I. Budnick, "Synthesis and Characterization of Structure Controlled Nano-Cobalt Particles," *Proc. Fall 2002 Meeting of the Materials Research Society*, **755**, DD5, 20 (2003).
316. X. Q. Ma, Y. D. Zhang, S. Q. Hui, M. Z. Wu, S. H. Ge, W. A. Hines, J. I. Budnick, B. M. Cetegen and S. Y. Semenov, "Detonation Consolidation of NiFe/SiO_2 and Co/SiO_2 Nanocomposites," *Proc. Fall 2002 Meeting of the Materials Research Society*, **759**, MM1.7 (2003).
318. Y. D. Zhang, M. Z. Wu, S. H. Ge, S. Q. Hui, X. Q. Ma, J. I. Budnick and W. Hines, "Consolidation and Magnetic Properties of Nanostructured $\text{Ni}_{75}\text{Fe}_{25}$," *IEEE Trans. Magnetics* **39**, issue 5, 3145-3147 (2003).

319. M. Daniel, D. M. Pease, N. Van Hung and J. I. Budnick, "Local Force Constants of Transition Metal Dopants in a Nickel Host: Comparison to Mossbauer Studies," *Phys. Rev. B* **69**, 134414 (2004).
320. M. Z. Wu, Y. D. Zhang, S. Hui, T. D. Xiao, S. H. Ge, W. A. Hines and J. I. Budnick, "Temperature Dependence of Magnetic Properties of SiO₂-coated Co nanoparticles," *JMMM* **268**, 20 (2004).
321. Y. D. Zhang, S. H. Ge, H. Zhang, S. Hui, J. I. Budnick, W. A. Hines, M. J. Yacaman, and M. Miki, "Effect of Spin Disorder on Magnetic Properties on Nanostructured Ni-ferrite," *J. Appl. Phys.* **95**, 7130 (2004).
322. A. L. Vasiliev, M. Aindow, Z. H. Han, J. I. Budnick, W. A. Hines, P. W. Klamut, M. Maxwell, and B. Dabrowski, "High-Resolution Transmission Electron Microscopy Studies of Planar Defects in the Magnetic Superconductor RuSr₂EuCu₂O₈," *Appl. Phys. Lett.* **85**, 3217 (2004).
323. Z. H. Han, J. I. Budnick, W. A. Hines, B. Dabrowski, S. Kolesnik and T. Maxwell, "Nuclear Magnetic Resonance Study of the Enhanced Ferromagnetic Ordering in Polycrystalline SrRu_{1-x}Cr_xO₃ (0 ≤ x ≤ 0.12)," *J. Phys. Condens. Matter* **17**, 1193-1200 (2005).
324. Z. H. Han, J. I. Budnick, W. A. Hines, P. W. Klamut, B. Dabrowski and M. Maxwell, "^{99,101}Ru NMR Study of the Ru-Site Vacancies in SrRu_{1-x}O₃ Compounds," *Phys. Rev. B* **71**, 214432 (2005).
325. Z. H. Han, J. I. Budnick, W. A. Hines, "Study of the Ru Sublattice Magnetic Structure in the Magnetic Superconductor RuSr₂GdCu₂O₈," *JMMM* **299**, 338 (2006).
326. X. F. Shen, Y. S. Ding, J. Liu, Z. H. Han, J. I. Budnick, W. A. Hines and S. L. Suib, "A Magnetic Route to Measure the Average Oxidation State of Mixed-Valent Manganese in Manganese Oxide Octahedral Molecular Sieves (OMS)," *J. Am. Chem. Soc.* **127**, 6166 (2005).
327. H. E. Mohottala, B. O. Wells, J. I. Budnick, W. A. Hines, L. Udby, C. Niedermayer, C. Bernhard, A. R. Moodenbaugh and F.-C. Chou, "Electronic Phase Separation in La_{2-x}Sr_xCuO_{4+y}," *Nature Materials* **5**, 377 (2006).
328. Z. H. Han, H. E. Mohottala, J. I. Budnick, W. A. Hines, P. W. Klamut, B. Dabrowski and M. Maxwell, "Complex Low-Temperature Magnetic Behavior of the Ordered Double-Perovskite Sr₂RuGdO₆," *J. Phys.: Condens. Matter* **18**, 2273–2283 (2006).
329. P. Shanthakumar, M. Balasubramanian, D. Pease, A. Frenkel, D. Potrepka, J.I. Budnick, W.A. Hines and V. Kraizman, "X-ray Study of the Ferroelectric [Ba_{0.6}Sr_{0.4}][(YTa)_{0.03}Ti_{0.97}]O₃; Comparison Between Materials Subjected to 1550⁰ C and 1600⁰ C Sintering Temperatures," *Phys. Rev. B* **74**, 174103 2006
330. H. E. Mohottala, B. O. Wells, J. I. Budnick, W. A. Hines, C. Niedermayer, C. Bernhard, A. R. Moodenbaugh and F.-C. Chou, "Electronic Phase Separation in La_{2-x}Sr_xCuO_{4+y}," *Physica* **374-375b**, 199-202 (2006).
331. A. I. Frenkel, D. M. Pease, J. I. Budnick, P. Metcalf, E. A. Stern, P. Shanthakumar and T. Huang, "Strain-Induced Bond Buckling and Its Role in Insulating Properties of Cr-Doped V₂O₃," *Phys. Rev. Lett.* **97**, 195502 (2006).
332. Z. H. Han, J. I. Budnick, W. A. Hines, B. Dabrowski, and T. Maxwell, "Nuclear Magnetic

- Resonance Study of the Ru/Mn Valence States and Magnetic Interactions in $\text{SrRu}_{0.9}\text{Mn}_{0.1}\text{O}_3$,” *Appl. Phys. Lett.* **89**, 102501 (2006)
333. A. I. Frenkel, D. M. Pease, J. I. Budnick, P. Metcalf, E. A. Stern, P. Shanthakumar and T. Huang, “Strain Defects and Their Role in Metal-Insulator Transition in Cr-doped V_2O_3 ,” *NSLS Science Highlights* (2007).
334. A. I. Frenkel, D. M. Pease, J. I. Budnick, P. Shanthakumar, T. Huang, “Application of Glancing Emergent Angle Fluorescence for Polarized XAFS Studies of Single Crystals,” *J. Synchrotron Rad.* **14**, 272-275 (2007).
335. B. Allimi, S. P. Alpay, D. Goberman, T. Huang, J. I. Budnick, D. M. Pease, A. I. Frenkel, “Growth of V_2O_3 Thin-Films on *a*-plane (110) and *c*- plane (001) Sapphire via Pulsed Laser Deposition,” *J. Mater. Res.* **22**, 2825-2831 (2007).
336. C. K. Xie, J. I. Budnick, B. O. Wells and J. C. Woicik, “Separation of the Strain and Finite Size Effect on the Ferromagnetic Properties of $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_3$ Thin Films,” *Appl. Phys. Lett.* **91**, 172509 (2007).
337. H. E. Mohottala, B. O. Wells, J. I. Budnick, W. A. Hines, Ch. Niedermayer and F. C. Chou, “Flux Pinning and Phase Separation in Oxygen Rich $\text{La}_{2-x}\text{Sr}_x\text{CuO}_{4+y}$ System,” *Phys. Rev. B.* **78**, 064504 (2008).
338. C. K. Xie, J. I. Budnick, W. A. Hines, B. O. Wells, et al., “Direct Evidence for the Suppression of Charge Stripes in Epitaxial $\text{La}_{1.67}\text{Sr}_{0.33}\text{NiO}_4$ Thin Films,” *Phys. Rev. B* **77**, 201403(R) (2008).
339. B. S. Allimi, S. P. Alpay, C. K. Xie, B. O. Wells, J. I. Budnick and D. M. Pease, “Resistivity of V_2O_3 Thin Films Deposited on *a*-plane (110) and *c*-plane (001) Sapphire by Pulsed Laser Deposition,” *Appl. Phys. Lett.* **92**, 202105 (2008).
340. C. K. Xie, J. I. Budnick, W. A. Hines, B. O. Wells and J. C. Woicik, “Strain-Induced Change in Local Structure and Its Effect on the Ferromagnetic Properties of $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_3$ Thin Films,” *Appl. Phys. Lett.* **93**, 182507 (2008).
341. H. E. Mohottala, B. O. Wells, J. I. Budnick, W. A. Hines, C. Niedermayer, A. R. Moodenbaugh and F.-C. Chou, “Electronic Phase Separation in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_{4+y}$ System: μSr ” to be submitted to *Phys. Rev.*
342. T. Huang, D. M. Pease, H. Chen, A. Frenkel, J. I. Budnick, P. Metcalf, P. Shanthakumar, M. Staruch, and A. J. Taylor, “Evidence for Percolation Effects in Cr Doped V_2O_3 : Infra Red and Terahertz Reflectivity,” submitted to *Phys. Rev B.*
343. Y. Nie, E. Brahim, J. I. Budnick, W. A. Hines, M. Jain, and B. O. Wells, "Suppression of superconductivity in FeSe films under tensile strain" submitted to *Appl. Phys. Lett.*