

PUBLICATIONS

“The Defect Diffusion Model and the Properties of Glasses and Liquids,” J. T. Bendler, J. J. Fontanella, M. F. Shlesinger, Journal of Non-Crystalline Solids, Vol. 352, pp. 4835-4842, 2006.

“Super-Pressed and Super-Cooled (?) PEO₂₀LiBETI,” K. R. Booher, S. Passerini, C. A. Edmondson, J. J. Fontanella, Solid State Ionics, Vol. 177, pp. 2687-2690, 2006.

“Free Volume Dynamics in Glasses and Supercolled Liquids,” J. T. Bendler, J. J. Fontanella, M. F. Shlesinger, J. Bartos, O. Sausa, J. Kristiak, Physical Review E, Vol. 71, pp. 031508-1-031508-10, 2005.

“Positron Annihilation Lifetime Response and Relaxation Dynamics in Glycerol,” J. Bartos, O. Sausa, O. Racko, J. Kristiak, J. J. Fontanella, Journal of Non-Crystalline Solids, Vol. 351, No. 33-36, pp. 2599-2604, 2005.

“Random Processes Underlying Stretched Times and Divergent Time Scales near the Glass Transition,” J. T. Bendler, J. J. Fontanella, M. F. Shlesinger, Proceedings of the SPIE – The International Society for Optical Engineering, Vol. 5845, pp. 238-244, 2004.

“Nanoscale Polymer Electrolytes: Ultrathin Electrodeposited Poly(Phenylene Oxide) with Solid-State Ionic Conductivity,” C. P. Rhodes, J. W. Long, M. S. Doescher, J. J. Fontanella, D. R. Rolison, Journal of Physical Chemistry B, Vol. 108, pp.13079-13087, 2004.

“Sources of Exponents,” J. T. Bendler, J. J. Fontanella, M. F. Shlesinger, Physica D, 193, 67 (2004).

“Reply to Comments on The Need to Reconsider Traditional Free Volume Theory for Polymer Electrolytes,” J. T. Bendler, J. J. Fontanella, M. F. Shlesinger, M. C. Wintersgill, Electrochim. Acta, 49, 5249 (2004).

“Evolution of the Dynamics in 1,4-Polyisoprene from a Nearly Constant Loss to a Johari-Goldstein β -Relaxation to the α -Relaxation,” C. M. Roland, M. J. Schroeder, J. J. Fontanella, K. L. Ngai, Macromolecules, 37, 2630 (2004).

“Characterization of Electrosprayed Nafion Films,” E. H. Sanders, K. A. McGrady, G. E. Wnek, C. A. Edmondson, J. M. Mueller, J. J. Fontanella, S. Suarez, S. G. Greenbaum, J. Power Sources, 129, 55 (2004).

“The Need to Reconsider Traditional Free Volume Theory for Polymer Electrolytes,” J. T. Bendler, J. J. Fontanella, M. F. Shlesinger and M. C. Wintersgill, Electrochim. Acta, 48, 2267 (2003).

“Physical Basis of Fragility,” J. T. Bendler, J. J. Fontanella and M. F. Shlesinger, Journal of Chemical Physics, 118, 6713 (2003).

“Magnetic Resonance Studies in Chemically Intercalated $\text{Li}_x\text{V}_2\text{O}_5$ ($x=1.16$ and 1.48),” P. E. Stallworth, F. S. Johnson, S. G. Greenbaum, S. Passerini, J. Flowers, W. Smyrl and J. J. Fontanella, Solid State Ionics, 146, 43 (2002).

“Why Conductivity Decreases with Pressure in Ion-Doped Polymers,” J. T. Bendler, J. J. Fontanella and M. F. Shlesinger, in International Workshop and collection of articles honoring Professor Antonio Coniglio on the occasion of his 60th Birthday, Scaling and Disordered Systems, Singapore, World Scientific (2002) 93 to 97.

“Electrical Conductivity in Glass-Forming Solid Electrolytes: Theory and Experiment,” J. T. Bendler, C. A. Edmondson, J. J. Fontanella, M. F. Shlesinger and M. C. Wintersgill, Solid State Ionics, 154-155, 337 (2002).

“Free Volume and Percolation in S-SEBS and Fluorocarbon Proton Conducting Membranes,” C. A. Edmondson and J. J. Fontanella, Solid State Ionics, 152-153, 355 (2002).

“Investigation of the Correlation Between Structural Relaxation Time and Configurational Entropy Under High Pressure in a Chlorinated Biphenyl,” R. Casalini, M. Paluch, J. J. Fontanella and C. M. Roland, Journal of Chemical Physics, 117, 4901 (2002).

“Anomalous Defect Diffusion Near the Glass Transition,” J. T. Bendler, J. J. Fontanella and M. F. Shlesinger, Chemical Physics, 284, 311 (2002).

“Transport and Structural Studies of Sulfonated Styrene-Ethylene Copolymer Membranes,” J. M. Serpico, S. G. Ehrenberg, J. J. Fontanella, X. Jiao, D. Perahia, K. A. McGrady, E. H. Sanders, G. E. Kellogg and G. E. Wnek, Macromolecules, 35, 5916 (2002).

“A New Vogel-Like Law: Ionic Conductivity, Dielectric Relaxation, and Viscosity near the Glass Transition,” J. T. Bendler, J. J. Fontanella and M. F. Shlesinger, Physical Review Letters, 87, 195503-1 (2001).

“Complex Impedance Studies of S-SEBS Block Polymer Proton-Conducting Membranes,” C. A. Edmondson, J. J. Fontanella, S. H. Chung, S. G. Greenbaum, G. E. Wnek, Electrochimica Acta, 46, 1623 (2001)

“Effect of High Pressure on the Electrical Conductivity of Ion Conducting Polymers,” J. T. Bendler, J. J. Fontanella, M. F. Shlesinger, M. C. Wintersgill, Electrochimica Acta, 46, 1615 (2001)

“Complex Impedance Studies of Proton-Conducting Membranes,” C. A. Edmondson, P. E. Stallworth, M. E. Chapman, J. J. Fontanella, M. C. Wintersgill, S. H. Chung and S. G. Greenbaum, Solid State Ionics, 135, 419 (2000).

"Electrical Conductivity, DSC and NMR Studies of PEG and PPG Containing Lithium Salts," M. C. Wintersgill, J. J. Fontanella, P. E. Stallworth, S. A. Newman, S. H. Chung and S. G. Greenbaum, Solid State Ionics, 135, 155 (2000).

"Pressure and Temperature Variation of the Electrical Conductivity of Poly(propylene glycol) containing LiCF₃SO₃," J. J. Fontanella, J. Chem. Phys., 111, 7103 (1999).

"NMR, DSC and High Pressure Electrical Conductivity Studies of Liquid and Hybrid Electrolytes," P. E. Stallworth, J. J. Fontanella, M. C. Wintersgill, C. D. Scheidler, J. J. Immel, S. G. Greenbaum and A. S. Gozdz, J. Power Sources, 81-82, 739 (1999).

"Dynamics in Propylene Carbonate and Propylene Carbonate Containing LiPF₆," J. J. Fontanella, M. C. Wintersgill and J. J. Immel, J. Chem. Phys., 110, 5392 (1999).

"Electrical Conductivity and NMR Studies of Methanol/Water Mixtures in NAFION Membranes," C. A. Edmondson, P. E. Stallworth, M. C. Wintersgill, J. J. Fontanella, Y. Dai and S. G. Greenbaum, Electrochim. Acta, 43, 1295 (1998).

"High Pressure Electrical Conductivity Studies of Acid Doped Polybenzimidazole," J. J. Fontanella, M. C. Wintersgill, J. S. Wainright, R. F. Savinell and M. Litt, Electrochim. Acta, Electrochim. Acta, 43, 1289 (1998).

"Complex Impedance Measurements on NAFION," M. C. Wintersgill and J. J. Fontanella, Electrochim. Acta, 43, 1533 (1998).

"The Dielectric Properties of Fluoropolymers", P. Avakian, H. W. Starkweather, Jr., J. J. Fontanella, M. C. Wintersgill, in Dielectric Spectroscopy of Polymeric Materials, eds. J. P. Runt and J. J. Fitzgerald, p. 379-393, Ch. 13, American Chemical Society, Washington DC, (1997).

"High Pressure NMR and Electrical Conductivity Studies of Gel Electrolytes based on Poly(acrylonitrile)," C. A. Edmondson, M. C. Wintersgill, J. J. Fontanella, F. Gerace, B. Scrosati and S. G. Greenbaum, Solid St. Ionics, 85, 173 (1996).

"Dielectric Properties of Polymers based on Hexafluoropropylene," H. W. Starkweather, P. Avakian, J. J. Fontanella, and M. C. Wintersgill, J. Thermal Analysis, 46, 785 (1996).

"High-Pressure Electrical Conductivity and NMR Studies in Variable Equivalent Weight NAFION Membranes," J. J. Fontanella, C. A. Edmondson, M. C. Wintersgill, Y. Wu and S. G. Greenbaum, Macromolecules, 29, 4944 (1996).

"High Pressure NMR and Electrical Conductivity Studies in Acid Form NAFION Membranes," R. S. Chen, P. E. Stallworth, S. G. Greenbaum, J. J. Fontanella and M. C. Wintersgill, Electrochim. Acta, 40 (1995) 309-313.

"Charge Transport and Water Molecular Motion in Variable Molecular Weight NAFION Membranes: High Pressure Electrical Conductivity and NMR," J. J. Fontanella, M. C. Wintersgill, R. S. Chen, Y. Wu and S. G. Greenbaum, Electrochim. Acta, 40 (1995) 2321-2326.

"The Dielectric Properties of Fluoropolymers", J. J. Fontanella, M. C. Wintersgill, Polymer Preprints, ACS Symposium on Dielectric Spectroscopy of Polymers, March 13-18 ,1 (1994)

"Optical Absorption and Electrical Relaxation in Alkaline Earth Fluorides doped with Uranium", J. J. Fontanella, M. C. Wintersgill, S. R. Montgomery, Journal of Physics and Chemistry of Solids, 55, 201 (1994).

"Electrical Relaxation in In-Situ Dried Acid-Form Nafion " J. J. Fontanella, M.G. McLin, and M. C. Wintersgill, Journal of Polymer Science, 32, 501 (1994).

"Complex Impedance, DSC and Lithium-7 NMR studies of Poly(propylene oxide) complexed with LiN(SO₂CF₃) and with LiAsF₆." S. D. Brown, S. G. Greenbaum, M.G.McLin J. J. Fontanella, M. C. Wintersgill , Solid State Ionics, 67, 257 (1994).

"Effect of Hydrofluorocarbons on the Low-Temperature Dielectric Properties of Poly(tetrafluoroethylene)." H. W. Starkweather, P. Avakian, J. J. Fontanella, and M. C.Wintersgill, Macromolecules, 27, 610 (1994).

"Effect of Water on the Dielectric Properties of Berlinite," J. J. Fontanella, M. C. Wintersgill, R. D. Shannon, and B. H. T. Chai, J. Phys. D: Applied Phys., 26, 101 (1993).

"Synthesis and Properties of a Cation Conducting, High Temperature Polymer Electrolyte." Y. Okamoto, Z. S. Xu, J. J. Fontanella M. G. McLin, Y. S. Pak and S. G. Greenbaum, Solid State Ionics, 60 (1993) 131-134.

"High Pressure Studies of Hydrated NAFION membranes: Dielectric Relaxation and Deuteron NMR """, M. G. McLin, M. C. Wintersgill, J. J. Fontanella, R. S. Chen, J. P. Jayakody, S. G. Greenbaum, Solid State Ionics, 60 (1993) 137.

"Electrical Relaxation of Dimers in Rare Earth-doped Calcium Fluoride" J. J. Fontanella, M. C. Wintersgill, P. C. McGowan, and J. F. Lomax, Journal of the Physics and Chemistry of Solids, 54 (1993) 513-516.

"Internal motions in Polylactide and Related Polymers" H. W. Starkweather, P. Avakian, J. J. Fontanella, and M. C.Wintersgill, Macromolecules, 26, 5084 (1993).

"Electrical Impedance Studies of Acid Form NAFION membranes." J. J. Fontanella, M.G. McLin, M. C.Wintersgill, J. P. Calame and S. G. Greenbaum Solid State Ionics, 66,1 (1993)

"Studies of Water in NAFION Membranes, using Deuteron and Oxygen-17 Nuclear Magnetic Resonance, and Dielectric Relaxation Techniques", R. S. Chen, J. P. Jayakody, S. G. Greenbaum, Y. S. Pak, G. Xu, M. G. McLin and J. J. Fontanella, J. Electrochem. Soc. 140, 889 (1993).

"Effect of Absorbed Chemical on the Low-Temperature Dielectric Properties of Poly(tetrafluoroethylene)," H. W. Starkweather, Jr., P. Avakian, R. R. Matheson, Jr., J. J. Fontanella, M. C. Wintersgill, Macromolecules, 25, 475 (1992).

"Electrical Relaxation in Poly(propylene oxide) with and without Alkali Metal Salts," J. J. Fontanella, J. J. Wilson, J. K. Smith, M. C. Wintersgill, C. S. Coughlin, P. Mazaud, S. G. Greenbaum, and R. L. Siddon, Solid State Ionics, 50, 259 (1992).

"Disorder in b" Aluminas: Dielectric Relaxation and X-Ray Absorption," S. G. Greenbaum, J. F. Lomax, M. C. Wintersgill, and J. J. Fontanella, Phys. Rev. B, 6369 (1992).

"The Low Temperature Dielectric Behavior of Polymers and Copolymers of Tetrafluoroethylene," H. W. Starkweather, Jr., P. Avakian, R. R. Matheson, Jr., J. J. Fontanella, M. C. Wintersgill, Proceedings of the Twentieth North American Thermal Analysis Conference, p. 103-108 (1992).

"Dielectric Relaxation in Polyperfluoropropylene Oxide," H. W. Starkweather, Jr., P. Avakian, R. R. Matheson, Jr., J. J. Fontanella, M. C. Wintersgill, Macromolecules, 25, 3815 (1992).

"Ultralow Temperature Dielectric Relaxation in Polyolefins," H. W. Starkweather, Jr., P. Avakian, R. R. Matheson, Jr., J. J. Fontanella, M. C. Wintersgill, Macromolecules, 25, 6871 (1992).

"The effect of Pressure on the Dielectric g Relaxation in Polytetrafluoroethylene and FEP," H. W. Starkweather, Jr., P. Avakian, R. R. Matheson, Jr., J. J. Fontanella, M. C. Wintersgill, Macromolecules, 25, 7145 (1992).

"Application of the Bendler-Shlesinger Generalization of the Vogel Equation to Ion Conducting Polymers," J. J. Fontanella, M. C. Wintersgill, C. S. Coughlin, P. Mazaud, and S. G. Greenbaum, J. Poly. Sci.: Poly. Physics, 29, 747 (1991).

"⁷Li NMR Study of Polymer Electrolytes Based on Composites of Poly(bis((methoxyethoxy)ethoxy)phosphazene) and Poly(ethylene oxide)," K. J. Adamic, S. G. Greenbaum, K. M. Abraham, M. Alamgir, M. C. Wintersgill, and J. J. Fontanella, Chemistry of Materials, 3, 534 (1991).

"Dielectric Loss in Vanadyl Pnictates," J. F. Lomax, J. J. Fontanella, M. C. Wintersgill, and A. Kotarski, Materials Research Society Symposium Proceedings Vol. 210, eds. G. Nazri, D. F. Shriver, R. A. Huggins and M. Balkanski, Materials Research Society, Pittsburgh, PA, Solid State Ionics II, p. 681-686 (1991).

"Nuclear Magnetic Resonance Studies of Polymer Electrolytes," S. G. Greenbaum, J. J. Fontanella, M. C. Wintersgill, Materials Research Society Symposium Proceedings Vol. 210, eds. G. Nazri, D. F. Shriver, R. A. Huggins and M. Balkanski, Materials Research Society, Pittsburgh, PA, Solid State Ionics II, p. 237-248 (1991).

"Complex Impedance and Multifrequency ²³Na Study of Poly(propylene oxide) Complexed with NaB(C₆H₅)₄," J. J. Fontanella, M. C. Wintersgill, and C. S. Coughlin, Solid State Ionics, 45, 277 (1991).

- "The Low Temperature Dielectric Behavior of Polymers and Copolymers of Tetrafluoroethylene," H. W. Starkweather, Jr., P. Avakian, R. R. Matheson, Jr., J. J. Fontanella, M. C. Wintersgill, *Macromolecules*, 24, 3853 (1991).
- "Internal Motions in a Copolymer of Ethylene with 56 Mole % Vinyl Alcohol," H. W. Starkweather, Jr., P. Avakian, J. J. Fontanella, M. C. Wintersgill, *Plastics, Rubber, and Composites: Processing and Applications*, 16, 255 (1991).
- "Thermally Stimulated Depolarization Currents and Ionic Conductivity of Cubic Lead Fluoride Containing Small Rare Earth Ions," D.R. Figueroa, J. J. Fontanella, M. C. Wintersgill, *Radiation Effects and Defects in Solids*, 114, 263 (1990).
- "ESR Studies of Divalent Copper in Polymer Electrolytes," K. J. Adamic, F. J. Owens, S. G. Greenbaum, M. C. Wintersgill, and J. J. Fontanella, *Proceedings of the Second International Symposium on Polymer Electrolytes*, ed. B. Scrosatti, London and New York: Elsevier Applied Science p. 61-71 (1990).
- "Dielectric Relaxation Studies on Polymer Electrolytes," S. G. Greenbaum, J. J. Wilson, M. C. Wintersgill, J. J. Fontanella, *Proceedings of the Second International Symposium on Polymer Electrolytes*, ed. B. Scrosatti, London and New York: Elsevier Applied Science p. 35-48 (1990).
- "Electrical Conductivity, DSC, and NMR Studies of Amorphous Poly(ethylene oxide) Complexed with Sodium Salts," M. C. Wintersgill, J. J. Fontanella, Y. S. Pak, S. G. Greenbaum, A. Al- Mudaris, and A. V. Chadwick, *Polymer*, 30, 1123 (1989).
- "Effect of Pressure on the Dielectric Constant of Arsenic Trisulfide Glass," P. M. Parachak, K. D. Bostic, D. R. Hicks, S. M. Jenkins, J. J. Fontanella, M. C. Wintersgill, and C. G. Andeen, *Journal of Physics and Chemistry of Solids*, 50, 867 (1989).
- "NMR, DSC, and Electrical Conductivity Studies of MEEP Complexed with NaCF₃SO₃," S. G. Greenbaum, K. J. Adamic, Y. S. Pak, M. C. Wintersgill, and J. J. Fontanella, *Solid State Ionics*, 28-30, 1042 (1988).
- "TSDC and DR Studies on PEO Complexed with Inorganic Salts," D. R. Figueroa, J. J. Fontanella, M. C. Wintersgill, J. P. Calame, and C. G. Andeen, *Solid State Ionics*, 28-30, 1023 (1988).
- "NMR Studies of Na⁺-Anion Association Effects in Polymer Electrolytes," S. G. Greenbaum, Y. S. Pak, M. C. Wintersgill, and J. J. Fontanella, *Solid State Ionics*, 31, 241 (1988).
- "Low Frequency Dielectric Properties of Polyether Electrolytes," M. C. Wintersgill and J. J. Fontanella, in *Polymer Electrolyte Reviews-2*, eds. J. R. MacCallum and C. A. Vincent, Elsevier Applied Science, London and New York, pp. 43-60 (1989).
- "High Pressure Conductivity and NMR Investigation of Siloxane- Based Polymer Electrolytes," S. G. Greenbaum, Y. S. Pak, K. J. Adamic, M. C. Wintersgill, J. J. Fontanella, D. A. Beam, H. L. Mei, and Y. Okamoto, *Molecular Crystals and Liquid Crystals*, 160, 347 (1988).

"Amorphous Phase Separation, Salt Precipitation, and High Pressure Effects in PPO Containing NaI," S. G. Greenbaum, K. J. Adamic, Y. S. Pak, M. C. Wintersgill, J. J. Fontanella, D. A. Beam, and C. G. Andeen, Proceedings of the Electrochemical Society Symposium on Electro-Ceramics and Solid State Ionics, 88-3, 211 (1988).

"DR, TSDC, DSC, TMA, AND DMA Studies in Polymers Complexed with Inorganic Salts," J. J. Fontanella, M. C. Wintersgill, J. P. Calame, D. R. Figueroa, and C. G. Andeen, Proceedings of the 16th North American Thermal Analysis Society Conference, 46, (1987).

"NMR, DSC, DMA, and High Pressure Electrical Conductivity Studies in PPO Complexed with Sodium Perchlorate," S. G. Greenbaum, Y. S. Pak, M. C. Wintersgill, J. J. Fontanella, J. W. Schultz, and C. G. Andeen, *J. Electrochem. Soc.*, 135, 235 (1988).

"DSC, Electrical Conductivity, and NMR Studies of Salt Precipitation Effects in PPO Complexes," M. C. Wintersgill, J. J. Fontanella, S. G. Greenbaum, and K. J. Adamic, *British Polymer Journal*, 20, 195 (1988).

"Electrical Relaxation in Rare Earth Doped Cadmium Fluoride," D. R. Figueroa, M. C. Wintersgill, J. J. Fontanella, D. A. Beam, and C. G. Andeen, *Crystal Lattice Defects and Amorphous Materials*, 15, 387 (1987).

"Electrical Relaxation in Calcium Fluoride Doped with Thorium and Zirconium," D. A. Beam, M. C. Wintersgill, J. J. Fontanella, D. R. Figueroa, A. V. Chadwick, and C. G. Andeen, *Crystal Lattice Defects and Amorphous Materials*, 15, 363 (1987).

"NMR, DSC, TMA, and High Pressure Electrical Conductivity Studies in Solid, Crosslinked Dimethylsiloxane-ethylene oxide Copolymer Networks Containing Sodium," M. C. Wintersgill, J. J. Fontanella, M. K. Smith, S. G. Greenbaum, K. J. Adamic, and C. G. Andeen, *Polymer*, 28, 633 (1987).

"Conductivity, DR, DSC, and NMR Studies of Poly(vinyl acetate) Complexed with Alkali Metal Salts," M. C. Wintersgill, J. J. Fontanella, J. P. Calame, M. K. Smith, S. G. Greenbaum, and C. G. Andeen, *Solid State Ionics*, 18&19, 326 (1986).

"DSC, Dielectric Relaxation and High Pressure Conductivity Studies of Poly(propylene oxide) Complexed with Alkali Metal Salts," J. J. Fontanella, M. C. Wintersgill, J. P. Calame, M. K. Smith, P. J. Welcher, and C. G. Andeen, *Solid State Ionics*, 18&19, 253 (1986).

"Laser Spectroscopy of ion-size effects on point-defect equilibria in lead fluoride doped with europium," F. J. Weesner, J. C. Wright, and J. J. Fontanella, *Phys. Rev.*, B33, 1372 (1986).

"Ionic conductivity in solid, crosslinked dimethylsiloxane-ethylene oxide copolymer networks containing sodium," K. J. Adamic, S. G. Greenbaum, M. C. Wintersgill, and J. J. Fontanella, *J. Appl. Phys.*, 60, 1342 (1986).

"The Effect of High Pressure on Electrical Relaxation in PPO and Electrical Conductivity in PPO Complexed with Lithium Salts," J. J. Fontanella, M. C. Wintersgill, M. K. Smith, J. Semancik, and C. G. Andeen, *J. Appl. Phys.*, 60, 2665 (1986).

"Electrical and differential scanning calorimetry studies of poly(ethylene oxide) complexed with alkaline earth thiocyanates," *J. Poly. Sci.:Poly. Phys. Ed.*, 23, 113 (1985).

"Low temperature activation volumes in beta-lead fluoride," D. R. Figueroa, J. J. Fontanella, M. C. Wintersgill, and C. G. Andeen, *Cryst. Latt. Def. and Amorph. Mat.*, 11, 123 (1985).

"High pressure and molecular weight variation of electrical relaxation in poly(ethylene oxide)," M. C. Wintersgill, J. J. Fontanella, P. J. Welcher, and C. G. Andeen, *J. Appl. Phys.*, 58, 2875 (1985).

"TSDC studies of PEO and PEO complexed with KSCN," J. P. Calame, J. J. Fontanella, M. C. Wintersgill, and C. G. Andeen, *J. Appl. Phys.*, 58, 2811 (1985).

"Electrical relaxation in poly(ethylene oxide)," J. J. Fontanella, M. C. Wintersgill, P. J. Welcher, J. P. Calame, and C. G. Andeen, *IEEE Transactions on Electrical Insulation*, EI-20, 943 (1985).

"NMR, electrical relaxation, and high pressure electrical conductivity in ion conducting polymers," S. G. Greenbaum and J. J. Fontanella, *Proceedings of the Blacksburg Workshop on Relaxation*, ed. K. L. Ngai and G. B. Wright, NTIS, U. S. Dept. of Commerce, Springfield, VA (1984).

"Radiation induced electrical relaxation in rare earth doped calcium fluoride," J. J. Fontanella, M. C. Wintersgill, G. C. Kolodziejczak, D. R. Figueroa, C. G. Andeen, G. A. Royce, V. K. Mathur, R. J. Abundi, and M. D. Brown, *Nuclear Instruments and Methods in Physics Research: Proceedings of the 2nd International Conference on Radiation Effects in Insulators*, B1, 431 (1984).

"Dielectric relaxation, ionic conductivity and activation volumes in cubic lead fluoride doped with alkali metal cations," D. R. Figueroa, J. J. Fontanella, M. C. Wintersgill, A. V. Chadwick and C. G. Andeen, *J. Phys. C:Solid State Phys.*, 17, 4399 (1984).

"Radiation effects in samarium-doped calcium fluoride," G. A. Royce, J. J. Fontanella, M. C. Wintersgill, V. K. Mathur, R. J. Abundi and M. D. Brown, *J. Luminesc.*, 29, 205 (1984).

"Association and bound motion in alkali metal doped cadmium fluoride," D. R. Figueroa, J. J. Fontanella, M. C. Wintersgill and C. G. Andeen, *Physical Review*, B29, 5909 (1984).

"Electrically conducting poly(vinyl acetate)," M. C. Wintersgill, J. J. Fontanella, J. P. Calame, S. G. Greenbaum and C. G. Andeen, *J. Electrochem. Soc.*, 103, 2208 (1984).

"Electrical relaxation in rare earth doped cubic lead fluoride," M. C. Wintersgill, J. J. Fontanella, F. P. Pursel, A. V. Chadwick, A. Azimi, V. M. Carr and C. G. Andeen, *Radiation Effects*, 75, 263 (1983).

"Electrical relaxation in pure and alkali metal-thiocyanate complexed poly(ethylene oxide)," J. J. Fontanella, M. C. Wintersgill, J. P. Calame and C. G. Andeen, Solid State Ionics, 8, 333 (1983).

"Effect of pressure on conductivity in poly(ethylene oxide) complexed with alkali metal salts," J. J. Fontanella, M. C. Wintersgill, J. P. Calame, F. P. Pursel, D. R. Figueroa and C. G. Andeen, Solid State Ionics, 9&10, 1139 (1983).

"Dielectric relaxation in poly(ethylene oxide) complexed with alkali metal perchlorates," M. C. Wintersgill, J. J. Fontanella, J. P. Calame, D. R. Figueroa and C. G. Andeen, Solid State Ionics, 11, 151 (1983).

"Anomalous pressure dependence of dipolar relaxation times in rare-earth doped lead fluoride," J. J. Fontanella, M. C. Wintersgill, D. R. Figueroa, A. V. Chadwick and C. G. Andeen, Physical Review Letters, 51, 1892 (1983).

"The relation between bound and free ion motion in some fluorides," J. J. Fontanella, M. C. Wintersgill, P. J. Welcher, A. V. Chadwick and C. G. Andeen, Solid State Ionics, 5, 585 (1982), and the Proceedings of the International Conference on Fast Ion Transport in Solids.

"Computer modelling of simple point defects in rare earth doped alkaline earth fluorides," R. J. Kimble Jr., P. J. Welcher, J. J. Fontanella, M. C. Wintersgill and C. G. Andeen, J. Phys. C:Solid State Phys., 15, 3441 (1982).

"Dielectric spectroscopy in rare earth doped lead fluoride," J. J. Fontanella, M. C. Wintersgill, P. J. Welcher, A. V. Chadwick, A. Azimi, V. M. Carr and C. G. Andeen, Proceedings of the Second European Conference on Solid State Chemistry, Studies in Inorganic Chemistry, R. Metselaar, H. J. M. Heijligers and J. Schoonman, eds. Vol.3, 219 (1982).

"Electrical properties of the fast ion conductor lanthanum fluoride," J. R. Igel, M. C. Wintersgill, J. J. Fontanella, A. V. Chadwick, C. G. Andeen and V. E. Bean, J. Phys. C:Solid State Phys., 15, 7215 (1982).

"The effects of pressure on the ionic conductivity of $\text{PEO}_8\text{LiClO}_4$," M. C. Wintersgill, J. J. Fontanella, M. Worboys, A. V. Chadwick and C. G. Andeen, 1982 Annual Report of the Conference on Electrical Insulation and Dielectric Phenomena, IEEE, p. 134.

"Low temperature heat capacity of barium fluoride," D. P. Dandekar, J. Fontanella, C. L. Huoh, and J. C. Ho, Phys. Rev., B26, 2264 (1982).

"Pressure variation of the low frequency dielectric constants of some anisotropic crystals," J. Link, M. C. Wintersgill, J. J. Fontanella, V. E. Bean and C. G. Andeen, J. Appl. Phys., 52, 936 (1981).

"Point defect activation volumes in the alkaline earth fluorides," J. J. Fontanella, M. C. Wintersgill, A. V. Chadwick, R. Saghafian and C. G. Andeen, J. Phys. C:Solid State Phys., 14,

2451 (1981).

"Clustering in rare-earth-doped alkaline earth fluorides," C. G. Andeen, J. J. Fontanella, M. C. Wintersgill, P. J. Welcher, R. J. Kimble Jr., and G. E. Matthews, *J. Phys. C: Solid State Phys.*, 14, 3557 (1981).

"The low temperature electrical properties of some anisotropic crystals," R. Shelby, J. Fontanella, and C. Andeen, *J. Phys. Chem. Solids*, 41, 69 (1980).

"The effect of quenching on the defect structure of calcium fluoride doped with erbium," J. Fontanella, D. Treacy, and C. Andeen, *J. Chem. Phys.*, 72, 2235 (1980).

"Activation volume for interstitial motion in strontium fluoride," C. Andeen, L. M. Hayden, and J. Fontanella, *Phys. Rev.*, B21, 794 (1980).

"Activation volume for vacancy motion in calcium fluoride," J. J. Fontanella, M. C. Wintersgill and C. G. Andeen, *Physica Status Solidi*, (b) 97, 303 (1980).

"Electrical relaxation in double doped calcium fluoride and activation volume for the RI relaxation," J. Fontanella, R. J. Kimble, Jr., M. C. Wintersgill, C. G. Andeen and M. K. Smith, *J. de Physique*, 41, C6-458 (1980).

"Activation volume for type I dipoles in lanthanum doped strontium fluoride," C. G. Andeen, J. J. Fontanella and M. C. Wintersgill, *J. Phys. C: Solid State Phys.*, 13, 3449 (1980).

"Temperature variation of the dielectric properties of bismuth germanate and bismuth germanium oxide," *J. Appl. Phys.*, 51, 4352 (1980).

"Dielectric relaxation studies of alkali metal doped calcium fluoride," J. J. Fontanella, A. V. Chadwick, V. M. Carr, M. C. Wintersgill and C. G. Andeen, *J. Phys. C: Solid State Phys.*, 13, 3457 (1980).

"Activation volume for dimer reorientation in rare earth doped calcium fluoride," M. C. Wintersgill, J. J. Fontanella, R. J. Kimble, P. J. Welcher and C. G. Andeen, *J. Phys. C: Solid State Phys.*, 13, L661 (1980).

"Dielectric relaxation studies of alkali-metal-doped strontium and barium fluoride," M. C. Wintersgill, J. J. Fontanella, R. Saghafian, A. V. Chadwick and C. G. Andeen, *J. Phys. C: Solid State Phys.*, 13, 6525 (1980).

"Electric dipole relaxation of mixed clusters in double doped calcium fluoride," C. Andeen, G. E. Matthews, Jr., M. K. Smith, and J. Fontanella, *Phys. Rev.*, B19, 5293 (1979).

"The dielectric properties of as-received and gamma irradiated fused silica," J. Fontanella, R. L. Johnston, G. H. Sigel, Jr., and C. Andeen, *J. Non-Cryst. Solids*, 31, 401 (1979).

"The real part of the dielectric constant of "pure" calcium fluoride, barium fluoride, strontium fluoride and magnesium oxide," M. C. Wintersgill, J. J. Fontanella, C. G. Andeen and D. Schuele, *J. Appl. Phys.*, 50, 8259 (1979).

"Accurate determination of the audio frequency dielectric properties of quartz and vitreous silica," C. Andeen, D. Schuele, T. C. Bracco, and J. Fontanella, 1975 Annual Report of the Conference on Electrical Insulation and Dielectric Phenomena, National Academy of Sciences, (Washington, D. C., 1978) p. 223.

"Dielectric relaxation in yttrium and lanthanum doped calcium fluoride," J. Fontanella, C. Andeen, and D. Schuele, *Phys. Rev.*, B17, 3429 (1978).

"Dipolar complexes in rare earth doped strontium fluoride," J. Fontanella, D. L. Jones, and C. Andeen, *Phys. Rev.*, B18, 4454 (1978).

"The dielectric spectrum of europium doped calcium fluoride," C. Andeen and J. Fontanella, *J. Phys. Chem. Solids*, 38, 237 (1977).

"Temperature and pressure variation of the refractive index of diamond," J. Fontanella, R. L. Johnston, J. H. Colwell, Jr., and C. Andeen, *Appl. Optics*, 16, 2949 (1977).

"Cluster associated relaxations in rare earth doped calcium fluoride," C. Andeen, D. Link, and J. Fontanella, *Phys. Rev.*, B16, 3762 (1977).

"The dielectric spectrum of erbium doped calcium fluoride," J. Fontanella and C. Andeen, *J. Phys. C: Solid State Phys.*, 9, 1055 (1976).

"Dielectric studies of Co(60) irradiated and oxygen annealed rare earth doped calcium fluoride," J. Fontanella, D. Bair, and C. Andeen, *J. de Phys.*, 37, C7-273 (1976).

"The low frequency dielectric constants of vitreous arsenic trisulphide," J. Fontanella, C. Andeen, and D. Schuele, *J. Phys. Chem. Solids*, 30, 1017 (1974).

"The effect of OH on the low frequency dielectric constant of vitreous silica," C. Andeen, D. Schuele, and J. Fontanella, *J. Appl. Phys.*, 45, 1071 (1974).

"The low frequency dielectric constant of quartz, sapphire, magnesium fluoride, and magnesium oxide," J. Fontanella, C. Andeen, and D. Schuele, *J. Appl. Phys.*, 45, 2852 (1974).

"Some comments on manganin wire pressure gauges," C. Andeen, D. Schuele, and J. Fontanella, *High Temperatures-High Pressures*, 5, 597 (1973).

"Low-frequency dielectric constants of the alkaline earth fluorides by the method of substitution," C. Andeen, J. Fontanella, and D. Schuele, *J. Appl. Phys.*, 42, 2216 (1971).

"Pressure and temperature derivatives of the low frequency dielectric constants of LiF, NaF, NaCl, NaBr, KCl, and KBr," J. Fontanella, C. Andeen, and D. Schuele, *Phys. Rev.*, B6, 582 (1971).

"Pressure and temperature derivatives of the low frequency dielectric constants of the alkaline earth fluorides," C. Andeen, D. Schuele, and J. Fontanella, Phys. Rev., B6, 591 (1971).

"A capacitive gauge for the accurate determination of high pressures," C. Andeen, J. Fontanella, and D. Schuele, Rev. Sci. Instr., 42, 495 (1971).

"Low-frequency dielectric constant of LiF, NaF, NaCl, NaBr, KCl, and KBr by the method of substitution," C. Andeen, J. Fontanella, and D. Schuele, Phys. Rev., B2, 5068 (1970).

"Accurate determination of the dielectric constant by the method of substitution," C. Andeen, J. Fontanella, and D. Schuele, Rev. Sci. Instr., 41, 1573 (1970).

"Low temperature gruneisen parameter of RbI from elasticity data," J. J. Fontanella and D. E. Schuele, J. Phys. Chem. Solids, 31, 647 (1970).