

LIST OF PUBLICATIONS

(642 TOTAL PUBLICATIONS)

Garrison Sposito

BOOKS

1. Sposito, G. 1970. *An Introduction to Quantum Physics*. John Wiley and Sons, New York. 426 p.
2. U.S./IHD Work Group on Education and Training (several co-authors). 1972. *Hydrology and Water Resources*. U.S. National Academy of Sciences, Washington, D.C. 73 p.
3. Sposito, G., and J. R. Dunning, Jr. 1973. *Power from the Earth*. National Science Foundation, Washington, D.C. (30-minute video)
4. Sposito, G. 1976. *An Introduction to Classical Dynamics*. John Wiley and Sons, New York. 337 p.
5. Sposito, G. 1981. *The Thermodynamics of Soil Solutions*. Clarendon Press, Oxford. 223 p.
6. Sposito, G. 1984. *Termodinamika Pochvennych Rastvorov*. Gidrometeoizdat, St. Petersburg. 240 p. (Authorized translation of *The Thermodynamics of Soil Solutions*, corrected and revised)
7. Sposito, G. 1984. *The Surface Chemistry of Soils*. Oxford University Press, New York and Oxford. 234 p.
8. Huang, P. M., M. Schnitzer, R. S. Adams, G. Sposito, and J. L. White. (editorial committee). 1986. *Interactions of Soil Minerals with Natural Organics and Microbes*. Soil Science Society of America, Madison, Wisconsin. 606 p.
9. Sposito, G. (editor). 1989. *The Environmental Chemistry of Aluminum*. CRC Press, Boca Raton, Florida. 301 p.
10. Sposito, G. 1989. *The Chemistry of Soils*. Oxford University Press, New York and Oxford. 277 p.
11. Committee on Opportunities in the Hydrologic Sciences (several co-authors). 1991. *Opportunities in the Hydrologic Sciences*. U.S. National Academy of Sciences, Washington, D.C. 348 p.
12. Committee on Women in Science and Engineering (several co-authors). 1991. *Women in Science and Engineering: Increasing their Numbers in the 1990s*. U.S. National Academy of Sciences, Washington, D.C. 152 p.

13. Sposito, G., and R.J. Reginato (editors). 1992. *Opportunities in Basic Soil Science Research*. Soil Science Society of America, Madison, Wisconsin. 109 p.
14. Sposito, G. 1993. *Water in the Valley and the Art of the Possible*. California Council for the Humanities/Modesto Junior College Series, "The Other California: Defining the Great Valley for the 21st Century". Modesto Junior College, Modesto, California. (60-minute video)
15. Sposito, G. 1994. *Chemical Equilibria and Kinetics in Soils*. Oxford University Press, New York. 272 p.
16. Sposito, G. (editor). 1996. *The Environmental Chemistry of Aluminum*. 2nd Ed. Lewis Publishers, Boca Raton, Florida. 464 p.
17. Dietrich, W.E., and G. Sposito (editors). 1997. *Hydrologic Processes from Catchment to Continental Scales*. Annual Reviews, Inc., Palo Alto, California. 337 p.
18. Sposito, G. (editor). 1998. *Scale Dependence and Scale Invariance in Hydrology*. Cambridge University Press, New York. 423 p.
19. Sposito, G., and A. Zabel (editors). 1998. *Soil Quality in the California Environment*. Annual Report of Research Projects 1996-1997. Kearney Foundation of Soil Science, University of California, Berkeley, California. 148 p.
20. Sposito, G. 1998. *Bodenchemie*. Ferdinand Enke Verlag, Stuttgart. 230 p. (Authorized translation of *The Chemistry of Soils*, corrected and revised)
21. Zabel, A., and G. Sposito (editors). 1999. *Soil Quality in the California Environment*. Annual Report of Research Projects 1997-1998. Kearney Foundation of Soil Science, University of California, Berkeley, California. 171 p.
22. Sposito, G. (editor). 1999. *The Environmental Chemistry of Aluminum*. 2nd Ed. National Institute for Compilation and Translation, Taipei. 562 p. (Authorized translation into Chinese by arrangement with Bardou-Chinese Media Agency)
23. Zabel, A., and G. Sposito (editors). 2000. *Soil Quality in the California Environment*. Annual Report of Research Projects 1998-1999. Kearney Foundation of Soil Science, University of California, Berkeley, California. 194 p.
24. Zabel, A., and G. Sposito (editors). 2001. *Soil Quality in the California Environment*. Annual Report of Research Projects 1999-2000. Kearney Foundation of Soil Science, University of California, Berkeley, California. 256 p.
25. Zabel, A., and G. Sposito (editors). 2002. *Soil Quality in the California Environment*. Annual Report of Research Projects 2000-2001. Kearney Foundation of Soil Science, University of California, Berkeley, California. 206 p.

26. Sposito, G., and A. Zabel (editors). 2003. The Assessment of Soil Quality. Special Issue. *Geoderma* 114:143-414.
27. Sposito, G. 2004. *The Surface Chemistry of Natural Particles*. Oxford University Press, New York. 242 p. eBook edition published August 2005.
28. Sposito, G. 2008. *The Chemistry of Soils*. 2nd Ed. Oxford University Press, New York. 330 p. eBook edition published August 2008.
29. Sposito, G. (editor). 2008. *Scale Dependence and Scale Invariance in Hydrology*. Paperback Ed. Cambridge University Press, New York. 423 p.
30. Intergovernmental Technical Panel on Soils (numerous co-authors). 2015. *Status of the World's Soil Resources*. Food and Agriculture Organization of the United Nations, Rome, Italy. 648 p.
31. Sposito, G. 2016. *The Chemistry of Soils*. 3rd Ed. Oxford University Press, New York. 255p.

TECHNICAL JOURNAL ARTICLES

1. Fuller, W. H., G. Johnson, and G. Sposito. 1960. Influence of municipal refuse compost on plant growth. *Compost Sci.* 1:16
2. Anderson, D. M., G. Sposito, and A. Linville. 1963. Temperature fluctuations at a wetting front: II. The effect of initial water content of the medium on the magnitude of the temperature fluctuations. *Soil Sci. Soc. Am. Proc.* 27:367.
3. Anderson, D. M., A. Linville, and G. Sposito. 1963. Temperature fluctuations at a wetting front: III. Apparent activation energies for water movement in the liquid and vapor phases. *Soil Sci. Soc. Am. Proc.* 27:610.
4. Anderson, D. M., G. M. Leaming, and G. Sposito. 1963. Volume changes of a thixotropic, sodium bentonite suspension during sol-gel-sol transition. *Science* 141:1040.
5. Anderson, D. M., and G. Sposito. 1963. Rate of adsorption of water vapor by degassed Arizona bentonite. *Nature* 199:1085.
6. Anderson, D. M., and G. Sposito. 1964. Heat of immersion of Arizona bentonite in water. *Soil Sci.* 97:214.
7. Sposito, G., and K. L. Babcock. 1966. Equilibrium theory of the kaolinite-water system at low moisture contents, with some remarks concerning adsorption hysteresis. *Clays Clay Miner.* 14:133.
8. Sposito, G., and K. L. Babcock. 1967. Charge-dipole model of cation hydration. *J. Chem. Physics* 47:153.
9. Sposito, G. 1967. Classical limit of the canonical partition function. *Am. J. Physics* 35:888.
10. Sposito, G. 1968. Quantum-ergodic problem. *J. Math. Physics* 9:1452.
11. Sposito, G. 1969. Proof of a conjecture, for large wave numbers, in Mihara and Puff's theory of the structure factor of liquid helium. *Physical Rev.* 182:284.
12. Sposito, G. 1969. Does a generalized Heisenberg principle operate in the social sciences? *Inquiry* 12:356.
13. Sposito, G. 1970. Equilibrium theory of liquid helium-four at absolute zero. *Physical Rev.* A2:948.
14. Sposito, G. 1970. The interatomic potential in liquid helium-four. *J. Low Temp. Physics* 3:491.
15. Sposito, G. 1971. High-energy neutron scattering and the Mihara-Puff theory of the structure factor for liquid helium-four. *Physical Rev.* A3:820.

16. Sposito, G. 1972. Thermodynamics of swelling clay-water systems. *Soil Sci.* 114:242.
17. Sposito, G., and E. Hukoveh. 1972. The interatomic potential in liquid helium-four: II. Fourier transform of the potential. *J. Low Temp. Physics* 9:495.
18. Sposito, G. 1973. Volume changes in swelling clays. *Soil Sci.* 115:315.
19. Sposito, G. 1973. Collective oscillations at long wavelengths in liquid ^4He . *J. Low Temp. Physics* 12:85.
20. Sposito, G. 1973. The Feynman phonon as a quantum of zero sound. *Physics Letters* 44A:235.
21. Sposito, G. 1974. Foundations of the quantum statistics of systems in equilibrium: A measure-theoretic approach. *J. Statistical Physics* 10:321.
22. Sposito, G. 1974. Landau's choice of the critical-point exponent β . *Am. J. Physics* 42:1119.
23. Sposito, G. 1974. On the dispersion of zero-sound in liquid ^4He . *J. Low Temp. Physics* 17:1.
24. Sposito, G. 1975. A thermodynamic integral equation for the equilibrium moisture profile in swelling soil. *Water Resour. Res.* 11:499.
25. Sposito, G. 1975. Steady vertical flows in swelling soils. *Water Resour. Res.* 11:461.
26. Sposito, G. 1975. On the differential equation for the equilibrium moisture profile in swelling soil. *Soil Sci. Soc. Am. Proc.* 39:1053.
27. Sposito, G., and D. M. Anderson. 1975. Infrared study of exchangeable cation hydration in montmorillonite. *Soil Sci. Soc. Am. Proc.* 39:1095.
28. Johnston, G. L., and G. Sposito. 1976. On the Stark effect of the plane rotator. *Am. J. Physics* 44:723.
29. Bhattacharya, R. N., V. K. Gupta, and G. Sposito. 1976. On the stochastic foundations of the theory of water flow through unsaturated soil. *Water Resour. Res.* 12:503.
30. Bhattacharya, R. N., V. K. Gupta, and G. Sposito. 1976. On the physical interpretation of the soil water diffusivity in terms of the theory of Markov processes. *Soil Sci.* 121:313. (NR)
31. Sposito, G., J. V. Giráldez, and R. J. Reginato. 1976. The theoretical interpretation of field observations of soil swelling through a material coordinate transformation. *Soil Sci. Soc. Am. J.* 40:208.
32. Bhattacharya, R. N., V. K. Gupta, and G. Sposito. 1976. A Markovian stochastic basis for the transport of water through unsaturated soil. *Soil Sci. Soc. Am. J.* 40:465.

33. Sposito, G., and J. V. Giráldez. 1976. Thermodynamic stability and the law of corresponding states in swelling soils. *Soil Sci. Soc. Am. J.* 40:352.
34. Holtzclaw, K. M., G. Sposito, and G. Bradford. 1976. Analytical properties of the soluble, metal-complexing fractions in sludge-soil mixtures. I. Extraction and purification of fulvic acid. *Soil Sci. Soc. Am. J.* 40:254.
35. Sposito, G., K. M. Holtzclaw, and J. Baham. 1976. Analytical properties of the soluble, metal-complexing fractions in sludge-soil mixtures. II. Comparative structural chemistry of fulvic acid. *Soil Sci. Soc. Am. J.* 40:691.
36. Gupta, V. K., G. Sposito, and R. N. Bhattacharya. 1977. Toward an analytical theory of water flow through inhomogeneous porous media. *Water Resour. Res.* 12:208.
37. Sposito, G., and S. V. Mattigod. 1977. On the chemical foundation of the sodium adsorption ratio. *Soil Sci. Soc. Am. J.* 41:323.
38. Sposito, G., and K. M. Holtzclaw. 1977. Titration studies on the polynuclear, polyacidic nature of fulvic acid extracted from sewage sludge-soil mixtures. *Soil Sci. Soc. Am. J.* 41:330.
39. Sposito, G., P. J. Sullivan, and V. K. Gupta. 1977. Experimental test of the Langevin Equation as a model for water flow through unsaturated soil. *Soil Sci. Soc. Am. J.* 41:820.
40. Veith, J. A., and G. Sposito. 1977. On the use of the Langmuir Equation in the interpretation of "adsorption" phenomena. *Soil Sci. Soc. Am. J.* 41:697.
41. Bhattacharya, R. N., V. K. Gupta, and G. Sposito. 1977. The application of the Markovian hypothesis to the theory of soil water movement: Reply to criticism. *Soil Sci. Soc. Am. J.* 41:828. (NR)
42. Veith, J. A., and G. Sposito. 1977. Reactions of alumino-silicates, aluminum hydrous oxides, and aluminum oxide with α -phosphate: The formation of X-ray amorphous analogs of variscite and montebrasite. *Soil Sci. Soc. Am. J.* 41:870.
43. Mattigod, S. V., and G. Sposito. 1977. Estimated association constants for some complexes of trace metals with inorganic ligands. *Soil Sci. Soc. Am. J.* 41:1092.
44. Sposito, G. 1977. The Gapon and the Vanselow selectivity coefficients. *Soil Sci. Soc. Am. J.* 41:1205.
45. Sposito, G., K. M. Holtzclaw, and D. A. Keech. 1977. Proton binding in fulvic acid extracted from sewage sludge-soil mixtures. *Soil Sci. Soc. Am. J.* 41:1119.
46. Holtzclaw, K. M., D. A. Keech, A. L. Page, G. Sposito, T. J. Ganje, and N. B. Ball. 1978. Trace metal distributions among the humic acid, the fulvic acid and precipitable fractions extracted with NaOH from sewage sludges. *J. Environ. Qual.* 7:124.

47. Baham, J., N. B. Ball, and G. Sposito. 1978. Gel filtration studies of trace metal-fulvic acid solutions extracted from sewage sludges. *J. Environ. Qual.* 7:181.
48. Giráldez, J. V., and G. Sposito. 1978. Moisture profiles during steady vertical flows in swelling soils. *Water Resour. Res.* 14:314.
49. Sposito, G., G. D. Schaumberg, T. G. Perkins, and K. M. Holtzclaw. 1978. Investigation of fulvic acid extracted from sewage sludge using carbon-13 and proton NMR spectroscopy. *Environ. Sci. Technol.* 12:931.
50. Sposito, G. 1978. The statistical mechanical theory of water transport through unsaturated soil. I. The conservation laws. *Water Resour. Res.* 14:474.
51. Sposito, G. 1978. The statistical mechanical theory of water transport through unsaturated soil. II. Derivation of the Buckingham-Darcy flux law. *Water Resour. Res.* 14:479.
52. Sposito, G., K. M. Holtzclaw, and C. S. LeVesque-Madore. 1978. Calcium ion complexation by fulvic acid extracted from sewage sludge-soil mixtures. *Soil Sci. Soc. Am. J.* 42:600.
53. Sposito, G., and K. M. Holtzclaw. 1978. Analytical properties of the soluble, metal-complexing fractions in sludge-soil mixtures: III. Unaltered anionic surfactants in fulvic acid. *Soil Sci. Soc. Am. J.* 42:607.
54. Chu, S.-Y., and G. Sposito. 1978. Single-particle motions in liquid water. *J. Chem. Physics* 69:2539.
55. Mattigod, S. V., and G. Sposito. 1978. Improved method for estimating the standard free energies of formation ($\Delta G_f^{\circ,298.15}$) of smectite. *Geochim. Cosmochim. Acta* 42:1753.
56. Sullivan, P. J., G. Sposito, S. M. Strathouse, and C. L. Hansen. 1979. Geologic nitrogen and the occurrence of high nitrate soils in the western San Joaquin Valley, California. *Hilgardia* 47:15.
57. Sposito, G. 1979. Derivation of the Langmuir equation for ion exchange reactions in soils. *Soil Sci. Soc. Am. J.* 43:197.
58. Sposito, G., and K. M. Holtzclaw. 1979. Copper (II) complexation by fulvic acid extracted from sewage sludge as influenced by nitrate versus perchlorate background ionic media. *Soil Sci. Soc. Am. J.* 43:47.
59. Holtzclaw, K. M., and G. Sposito. 1979. Analytical properties of the soluble, metal-complexing fractions in sludge-soil mixtures: IV. Determination of carboxyl groups in fulvic acid. *Soil Sci. Soc. Am. J.* 43:318.
60. Sposito, G., and S. V. Mattigod. 1979. Ideal behavior in Na^+ -trace metal cation exchange on Camp Berteau montmorillonite. *Clays Clay Miner.* 27:125.

61. Veith, J. A., and G. Sposito. 1979. On the average equilibrium OH/Al molar ratio for aluminum adsorbed by a synthetic cation exchanger. *Soil Sci.* 127:161
62. Bingham, F. T., R. J. Mahler, and G. Sposito. 1979. Effects of irrigation water composition on exchangeable sodium status of a field soil. *Soil Sci.* 127:248.
63. Sposito, G., V. K. Gupta, and R. N. Bhattacharya. 1979. Foundational theories of solute transport in porous media: A critical review. *Adv. Water Resour.* 2:59.
64. Sposito, G., K. M. Holtzclaw, and C. S. LeVesque-Madore. 1979. Cupric ion complexation by fulvic acid extracted from sewage sludge-soil mixtures. *Soil Sci. Soc. Am. J.* 43:1148.
65. Strathouse, S. M., G. Sposito, P. J. Sullivan, and L. J. Lund. 1980. Geologic nitrogen: A potential geochemical hazard in the San Joaquin Valley, California. *J. Environ. Qual.* 9:54.
66. Sposito, G., and K. M. Holtzclaw. 1980. Interpretation of the infrared spectrum of fulvic acid extracted from sewage sludge. *Soil Sci. Soc. Am. J.* 44:177. (NR)
67. Sposito, G. 1980. Derivation of the Freundlich equation for ion-exchange reactions in soils. *Soil Sci. Soc. Am. J.* 44:652.
68. Oster, J. D., and G. Sposito. 1980. The Gapon coefficient and the ESP-SAR relation. *Soil Sci. Soc. Am. J.* 44:258.
69. Chu, S.-Y., and G. Sposito. 1980, 1981. A derivation of the macroscopic solute transport equation for homogeneous, saturated porous media. *Water Resour. Res.* 16:542; 17:440.
70. Mahler, R. J., F. T. Bingham, G. Sposito, and A. L. Page. 1980. Cadmium-enriched sewage sludge application to acid and calcareous soils: Relation between treatment, Cd in saturation extracts and Cd uptake. *J. Environ. Qual.* 9:359.
71. Schaumberg, G. D., C. S. LeVesque-Madore, G. Sposito, and L. J. Lund. 1980. Infrared spectroscopic study of the water-soluble fraction of sewage sludge-soil mixtures during incubation. *J. Environ. Qual.* 9:297.
72. Holtzclaw K. M., G. D. Schaumberg, C. S. LeVesque-Madore, G. Sposito, J. A. Heick, and C. T. Johnston. 1980. Analytical properties of the soluble, metal-containing fractions in sludge-soil mixtures: V. Amino acids, hexosamines and other carbohydrates in fulvic acid. *Soil Sci. Soc. Am. J.* 44:736.
73. Sposito, G. 1980. General criteria for the validity of the Buckingham-Darcy Flow Law. *Soil Sci. Soc. Am. J.* 44:1159.
74. Elprince, A. M., A. P. Vanselow, and G. Sposito. 1980. Heterovalent, ternary cation exchange equilibria: NH_4^+ - Ba^{2+} - and La^{3+} exchange on montmorillonite. *Soil Sci. Soc. Am. J.* 44:964.

75. Chu, S.-Y., and G. Sposito. 1981. A derivation of the macroscopic transport equation for homogeneous, saturated porous media. II. Reactive solutes at low concentration. *Water Resour. Res.* 17:333.
76. Sposito, G. 1981. The operational definition of the zero point of charge in soils. *Soil Sci. Soc. Am. J.* 45:292.
77. Gupta, V. K., R. N. Bhattacharya, and G. Sposito. 1981. A molecular approach to the foundations of the theory of solute transport in porous media. I. Conservative solutes in homogeneous, saturated media. *J. Hydrol.* 50:355.
78. Elprince, A. M., and G. Sposito. 1981. Thermodynamic derivation of equations of the Langmuir type for ion equilibria in soils. *Soil Sci. Soc. Am. J.* 45:277.
79. Schaumberg, G. D., C. S. LeVesque-Madore, G. Sposito, and L. J. Lund. 1981. Infrared spectral evidence for LAS in sewage sludge-soil mixtures. *J. Environ. Qual.* 10:244. (NR)
80. Sposito, G., K. M. Holtzclaw, and C. S. LeVesque-Madore. 1981. Trace metal complexation by fulvic acid extracted from sewage sludge: I. Determination of stability constants and linear correlation analysis. *Soil Sci. Soc. Am. J.* 45:465.
81. Sposito, G., and S.-Y. Chu. 1981. The statistical mechanical theory of groundwater flow. *Water Resour. Res.* 17:885.
82. Sposito, G. 1981. Single-particle motions in liquid water. II. The hydrodynamic model. *J. Chem. Physics* 74:6943.
83. Sposito, G. 1981. Trace metals in contaminated waters. *Environ. Sci. Technol.* 15:396.
84. Sposito, G., K. M. Holtzclaw, C. T. Johnston, and C. S. LeVesque-Madore. 1981. Thermodynamics of Na^+ - Cu^{2+} exchange on Wyoming bentonite at 298 K. *Soil Sci. Soc. Am. J.* 45:1079.
85. Chu, S.-Y., and G. Sposito. 1981, 1997. The thermodynamics of ternary cation exchange systems and the subregular model. *Soil Sci. Soc. Am. J.* 45:1084; 61:995.
86. Sposito, G., F. T. Bingham, S. S. Yadav, and C. A. Inouye. 1982. Trace metal complexation by fulvic acid extracted from sewage sludge: II. Development of chemical models. *Soil Sci. Soc. Am. J.* 45:51.
87. Sposito, G., L. J. Lund, and A. C. Chang. 1982. Trace metal chemistry in arid-zone field soils amended with sewage sludge: I. Fractionation of Ni, Cu, Zn, Cd, and Pb in solid phases. *Soil Sci. Soc. Am. J.* 46:260.
88. Sposito, G., K. M. Holtzclaw, C. S. LeVesque-Madore, and C. T. Johnston. 1982. Trace metal chemistry in arid-zone field soils amended with sewage sludge: II. Comparative study of the fulvic acid fraction. *Soil Sci. Soc. Am. J.* 46:265.

89. Schaumberg, G. D., K. M. Holtzclaw, C. S. LeVesque-Madore and G. Sposito. 1982. Characterization of sulfur in fulvic acids extracted from anaerobically-digested sewage sludge. *Soil Sci. Soc. Am. J.* 46:319.
90. Sposito, G., and R. Prost. 1982. Structure of water adsorbed on smectites. *Chem. Rev.* 82:553.
91. Sposito, G., and S.-Y. Chu. 1982. Internal energy balance and the Richards equation. *Soil Sci. Soc. Am. J.* 46:889.
92. Sposito, G. 1982. Theory of quasielastic neutron scattering by water in heterogeneous systems. *Molec. Physics* 47:1377.
93. Sposito, G. 1982. On the use of the Langmuir equation in the interpretation of "adsorption" phenomena. II. The "two-surface" Langmuir equation. *Soil Sci. Soc. Am. J.* 46:1147.
94. Sposito, G. 1983. On the surface complexation model of the oxide-aqueous solution interface. *J. Colloid Interface Sci.* 91:329.
95. Bingham, F. T., J. E. Strong, and G. Sposito. 1983. Influence of chloride salinity on cadmium uptake by Swiss chard. *Soil Sci.* 135:160.
96. Sposito, G., R. Prost, and J.-P. Gaultier. 1983. Infrared spectroscopic study of adsorbed water on reduced-charge Na/Li-montmorillonites. *Clays Clay Miner.* 31:9.
97. Chu, S.-Y., G. Sposito, and W. A. Jury. 1983. The cross coupling transport coefficient for the steady flow of heat in soil under a gradient of water content. *Soil Sci. Soc. Am. J.* 47:21.
98. Sposito, G., K. M. Holtzclaw, C. Jouany, L. Charlet and A. L. Page. 1983. Sodium-calcium and sodium-magnesium exchange on Wyoming bentonite in perchlorate and chloride background ionic media. *Soil Sci. Soc. Am. J.* 47:51.
99. Giráldez, J. V., G. Sposito, and C. Delgado. 1983. A general soil volume change equation. I. The two-parameter model. *Soil Sci. Soc. Am. J.* 47:419.
100. Giráldez, J. V., G. Sposito, and C. Delgado. 1983. A general soil volume change equation. II. Effect of load pressure. *Soil Sci. Soc. Am. J.* 47:422.
101. Baham, J., and G. Sposito. 1983. Chemistry of water-soluble, metal-complexing ligands extracted from an anaerobically-digested sewage sludge. *J. Environ. Qual.* 12:96.
102. Sposito, G., K. M. Holtzclaw, C. Jouany, and L. Charlet. 1983. Cation selectivity in sodium-calcium, sodium-magnesium, and calcium-magnesium exchange on Wyoming bentonite at 298 K. *Soil Sci. Soc. Am. J.* 47:917.
103. Sposito, G. 1983. On the measurement of permanent charge in oxisols. *Soil Sci. Soc. Am. J.* 47:1058.

104. Sposito, G., C. S. LeVesque, J. P. LeClaire, and A. C. Chang. 1983. Trace metal chemistry in arid-zone field soils amended with sewage sludge: III. Effect of time on the extraction of trace metals. *Soil Sci. Soc. Am. J.* 47:898.
105. Sposito, G., C. Jouany, K. M. Holtzclaw, and C. S. LeVesque. 1983. Calcium-magnesium exchange on Wyoming bentonite in the presence of adsorbed sodium. *Soil Sci. Soc. Am. J.* 47:1081.
106. Bingham, F. T., G. Sposito, and J. E. Strong. 1984. The effect of chloride on the availability of cadmium. *J. Environ. Qual.* 13:711.
107. Sposito, G. 1984. The future of an illusion: Ion activities in soil solutions. *Soil Sci. Soc. Am. J.* 48:531.
108. Blaser, P., G. Sposito, and K. M. Holtzclaw. 1984. Composition and acidic functional group chemistry of an aqueous chestnut leaf litter extract. *Soil Sci. Soc. Am. J.* 48:278.
109. Baveye, P., and G. Sposito. 1984. The operational significance of the continuum hypothesis in the theory of water movement through soils and aquifers. *Water Resour. Res.* 20:521.
110. LeClaire, J. P., A. C. Chang, C. S. LeVesque, and G. Sposito. 1984. Trace metal chemistry in arid-zone field soils amended with sewage sludge: IV. Correlations between zinc uptake and extracted soil zinc fractions. *Soil Sci. Soc. Am. J.* 48:509.
111. Goldberg, S. R., and G. Sposito. 1984. A chemical model of phosphate adsorption by soils: I. Reference oxide minerals. *Soil Sci. Soc. Am. J.* 48:772.
112. Goldberg, S. R., and G. Sposito. 1984. A chemical model of phosphate adsorption by soils: II. Noncalcareous soils. *Soil Sci. Soc. Am. J.* 48:779.
113. Fletcher, P. F., G. Sposito, and C. S. LeVesque. 1984. Sodium-calcium-magnesium exchange reactions on a montmorillonitic soil: I. Binary exchange reactions. *Soil Sci. Soc. Am. J.* 48:1016.
114. Fletcher, P. F., K. M. Holtzclaw, C. Jouany, G. Sposito, and C. S. LeVesque. 1984. Sodium-calcium-magnesium exchange reactions on a montmorillonitic soil: II. Ternary exchange reactions. *Soil Sci. Soc. Am. J.* 48:1022.
115. Johnston, C. T., G. Sposito, D. F. Bocian, and R. R. Birge. 1984. Vibrational spectroscopic study of the interlamellar kaolinite:dimethylsulfoxide complex. *J. Phys. Chem.* 88:5959.
116. Senesi, N., and G. Sposito. 1984. Residual copper(II) complexes in purified soil and sewage sludge fulvic acids: Electron spin resonance study. *Soil Sci. Soc. Am. J.* 48:1247.
117. Sposito, G. 1985. Chemical models of inorganic pollutants in soils. *C.R.C. Crit. Rev. in Environ. Control* 15:1.

118. Senesi, N., D. F. Bocian, and G. Sposito. 1985. Electron spin resonance investigation of copper(II) complexation by soil fulvic acid. *Soil Sci. Soc. Am. J.* 49:114.
119. Senesi, N., D. F. Bocian, and G. Sposito. 1985. Electron spin resonance investigation of copper(II) complexation by fulvic acid extracted from sewage sludge. *Soil Sci. Soc. Am. J.* 49:119.
120. Giráldez, J. V., and G. Sposito. 1985. Infiltration in swelling soils. *Water Resour. Res.* 21:33.
121. Johnston, C. T., G. Sposito, and R. R. Birge. 1985. Raman spectroscopic study of kaolinite in aqueous suspension. *Clays Clay Miner.* 33:483.
122. Sposito, G., and W. A. Jury. 1985. Inspectional analysis in the theory of water flow through unsaturated soil. *Soil Sci. Soc. Am. J.* 49:791.
123. Jury, W. A., and G. Sposito. 1985. Field calibration and validation of solute transport models for the unsaturated zone. *Soil Sci. Soc. Am. J.* 49:1331.
124. Sposito, G., and P. Fletcher. 1985. Sodium-calcium-magnesium exchange reactions on a montmorillonitic soil: III. Calcium-magnesium exchange selectivity. *Soil Sci. Soc. Am. J.* 49:1160.
125. Sposito, G., C. S. LeVesque. 1985. Sodium-calcium-magnesium exchange on Silver Hill illite. *Soil Sci. Soc. Am. J.* 49:1153, 50:837.
126. Baveye, P., and G. Sposito. 1985. Macroscopic balance equations in soils and aquifers: The case of space- and time-dependent instrumental response. *Water Resour. Res.* 21:1116.
127. Goldberg, S., and G. Sposito. 1985. On the mechanism of specific phosphate adsorption by hydroxylated mineral surfaces: A review. *Commun. Soil Sci. Plant Anal.* 16:801.
128. Sposito, G. 1986. The polymer model of thermochemical clay mineral stability. *Clays Clay Miner.* 34:198.
129. Traina, S. J., G. Sposito, D. Hesterberg, and U. Kafkafi. 1986. Effects of pH and organic acids on orthophosphate solubility in an acidic, montmorillonitic soil. *Soil Sci. Soc. Am. J.* 50:45.
130. Sposito, G. 1986. The "physics" of soil water physics. *Water Resour. Res.* 22:83S.
131. Sposito, G. 1986. Sorption of trace metals by humic materials in soils and natural waters. *C.R.C. Crit. Rev. Environ. Control* 16:193.
132. Holtzclaw, K. M., Sposito, G., and J. D. Rhoades. 1986. Improved selective dissolution method for the determination of calcite and dolomite in soils. *Soil Sci.* 142:63.

133. Sposito, G., W. A. Jury, and V. K. Gupta. 1986. Fundamental problems in the stochastic convection-dispersion model of solute transport in aquifers and field soils. *Water Resour. Res.* 22:77.
134. Jury, W. A., G. Sposito, and R. E. White. 1986. A transfer-function model of solute transport through soil. 1. Fundamental concepts. *Water Resour. Res.* 22:243.
135. White, R. E., J. S. Dyson, R. A. Haigh, W. A. Jury, and G. Sposito. 1986. A transfer-function model of solute transport through soil. 2. Illustrative applications. *Water Resour. Res.* 22:248.
136. Sposito, G., R. E. White, P. R. Darrah, and W. A. Jury. 1986. A transfer-function model of solute transport through soil. 3. The convection-dispersion equation. *Water Resour. Res.* 22:255.
137. Traina, S. J., G. Sposito, D. Hesterberg, and U. Kafkafi. 1986. Effects of ionic strength and added calcium ions on citrate-orthophosphate interactions in an acidic, montmorillonitic soil. *Soil Sci. Soc. Am. J.* 50:623.
138. Bingham, F. T., G. Sposito, and J. E. Strong. 1986. The effect of sulfate on the availability of cadmium. *Soil Sci.* 141:172.
139. Baham, J., and G. Sposito. 1986. Proton and metal complexation by water soluble ligands extracted from an anaerobically digested sewage sludge. *J. Environ. Qual.* 15:239.
140. Sposito, G., C. S. LeVesque, and D. Hesterberg. 1986. Calcium-magnesium exchange on illite in the presence of adsorbed sodium. *Soil Sci. Soc. Am. J.* 50:905.
141. Neal, R. H., and G. Sposito. 1986. Effects of soluble organic matter and sewage sludge amendments on cadmium sorption by soils at low cadmium concentrations. *Soil Sci.* 142:164.
142. Senesi, N., G. Sposito, and J. P. Martin. 1986. Copper(II) and iron(III) complexation by soil humic acids: An IR and ESR study. *Sci. Total Environ.* 55:351.
143. Sposito, G., and W. A. Jury. 1986. Group invariance and field-scale solute transport. *Water Resour. Res.* 22:1743.
144. Holtzclaw, K. M., R. H. Neal, G. Sposito, and S. J. Traina. 1987. A sensitive colorimetric method for the quantitation of selenite in soil solutions and natural waters. *Soil Sci. Soc. Am. J.* 51:75.
145. Sposito, G., and S. J. Traina. 1987. An ion-association model for highly saline, sodium chloride-dominated waters. *J. Environ. Qual.* 16:80.
146. Blaser, P., and G. Sposito. 1987. Spectrofluorometric investigation of trace metal complexation by an aqueous chestnut leaf litter extract. *Soil Sci. Soc. Am. J.* 51:612.

147. Jury, W. A., D. Russo, G. Sposito, and H. Elabd. 1987. The spatial variability of water and solute transport properties in unsaturated soil. I. Analysis of property variation and spatial structure with statistical models. *Hilgardia* 55(4):1.
148. Jury, W. A., D. Russo, and G. Sposito. 1987. The spatial variability of water and solute transport properties in unsaturated Soil. II. Scaling models of water transport. *Hilgardia* 55(4):33.
149. Neal, R. H., G. Sposito, K. M. Holtzclaw, and S. J. Traina. 1987. Selenite adsorption on alluvial soils: I. Soil composition and pH effects. *Soil Sci. Soc. Am. J.* 51:1161.
150. Neal, R. H., G. Sposito, K. M. Holtzclaw, and S. J. Traina. 1987. Selenite adsorption on alluvial soils: II. Solution composition effects. *Soil Sci. Soc. Am. J.* 51:1165.
151. Senesi, N., G. Sposito, and J. P. Martin. 1987. Copper(II) and iron(III) complexation by humic acid-like polymers (melanins) from soil fungi. *Sci. Total Environ.* 62:241.
152. Senesi, N., and G. Sposito. 1987. Copper(II) complexes with refractory anionic surfactants found in sewage sludge. *Water Air Soil Pollut.* 35:147.
153. Charlet, L., and G. Sposito. 1987. Monovalent ion adsorption by an Oxisol. *Soil Sci. Soc. Am. J.* 51:1155.
154. Traina, S. J., G. Sposito, G. R. Bradford, and U. Kafkafi. 1987. Kinetic study of citrate effects on orthophosphate solubility in an acidic, montmorillonitic soil. *Soil Sci. Soc. Am. J.* 51:1583.
155. Sposito, G., and D. A. Barry. 1987. On the Dagan model of solute transport in groundwater: Foundational aspects. *Water Resour. Res.* 23:1867.
156. Barry, D. A., and G. Sposito. 1988. Application of the convection-dispersion model to solute transport in finite soil columns. *Soil Sci. Soc. Am. J.* 52:3.
157. Thellier, C., and G. Sposito. 1988. Quaternary cation exchange on Silver Hill illite. *Soil Sci. Soc. Am. J.* 52:979.
158. Sposito, G., N. Senesi, and K. M. Holtzclaw. 1988. Fluorescence quenching and copper complexation by a chestnut leaf litter extract: Spectroscopic evidence. *Soil Sci. Soc. Am. J.* 52:632.
159. Sposito, G., J. C. M. deWit, and R. H. Neal. 1988. Selenite adsorption on alluvial soils: III. Chemical modeling. *Soil Sci. Soc. Am. J.* 52:947.
160. Miano, T., G. Sposito, and J. P. Martin. 1988. Fluorescence spectroscopy of humic substances. *Soil Sci. Soc. Am. J.* 52:1016.
161. Barry, D. A., J. Coves, and G. Sposito. 1988. On the Dagan model of solute transport in groundwater: Application to the Borden site. *Water Resour. Res.* 24:1805.

162. Shotyk, W., and G. Sposito. 1988. Fluorescence quenching and aluminum complexation by a chestnut leaf litter extract. *Soil Sci. Soc. Am. J.* 52:1293.
163. Bar-Yosef, B., U. Kafkafi, R. Rosenberg, and G. Sposito. 1988. Competitive adsorption of phosphate by calcium- and potassium-saturated kaolinite and montmorillonite: I. Effect of equilibration time, ionic strength, phosphate concentration and pH. *Soil Sci. Soc. Am. J.* 52:1580.
164. Kafkafi, U., B. Bar-Yosef, R. Rosenberg, and G. Sposito. 1988. Competitive adsorption of phosphate by calcium- and potassium-saturated kaolinite and montmorillonite: II. Organic anion competition. *Soil Sci. Soc. Am. J.* 52:1585.
165. Neal, R. H., and G. Sposito. 1989. Selenate adsorption on alluvial soils. *Soil Sci. Soc. Am. J.* 53:70.
166. Thellier, C., and G. Sposito. 1989. Influence of electrolyte concentration on quaternary cation exchange by Silver Hill illite. *Soil Sci. Soc. Am. J.* 53:705.
167. Thellier, C., and G. Sposito. 1989. Influence of electrolyte concentration and exchangeable cations on the flocculation of Silver Hill illite. *Soil Sci. Soc. Am. J.* 53:711.
168. Charlet, L., and G. Sposito. 1989. Bivalent ion adsorption by an Oxisol. *Soil Sci. Soc. Am. J.* 53:691.
169. Senesi, N., and G. Sposito. 1989. Characterization and stability of transition metal complexes of chestnut (*Castanea sativa* L.) leaf litter. *J. Soil Sci.* 40:461.
170. Senesi, N., G. Sposito, K. M. Holtzclaw, and G. R. Bradford. 1989. Chemical properties of metal-humic acid fractions of a sewage sludge-amended Aridisol. *J. Environ. Qual.* 18:186.
171. Senesi, N., G. Sposito, and G. R. Bradford. 1989. Iron, copper, and manganese complexation by forest leaf litter. *Forest Sci.* 35:1040.
172. Barry, D. A., and G. Sposito. 1989. Analytical solution of a convection-dispersion model with time-dependent transport coefficients. *Water Resour. Res.* 25:2407.
173. Fletcher, P., and G. Sposito. 1989. The chemical modeling of clay-electrolyte interactions for montmorillonite. *Clay Minerals* 24:375.
174. Sposito, G. 1989. Surface reactions in natural aqueous colloidal systems. *Chimia* 43:169.
175. Thellier, C., K. M. Holtzclaw, J. D. Rhoades, and G. Sposito. 1990. Chemical effects of saline irrigation water on a San Joaquín Valley soil: I. Column studies, II. Field soil samples. *J. Environ. Qual.* 19:50, 56.
176. Shotyk, W., and G. Sposito. 1990. Ligand concentration effects on aluminum complexation by a chestnut leaf litter extract. *Soil Sci. Soc. Am. J.* 54:933.

177. Barry, D. A., and G. Sposito. 1990. Three-dimensional statistical moment analysis of the Stanford/Waterloo Borden tracer Data. *Water Resour. Res.* 26:1735.
178. Hartman, H., G. Sposito, A. Yang, S. Manne, S.A.C. Gould, and P. K. Hansma. 1990. Molecular-scale imaging of clay mineral surfaces with the atomic force microscope. *Clays Clay Miner.* 38:337.
179. Shotyk, W., and G. Sposito. 1990. Fluorescence spectroscopy of aqueous leaf litter extracts and their complexes with aluminum. *Soil Sci. Soc. Am. J.* 54:1305.
180. Miano, T., G. Sposito, and J. P. Martin. 1990. Fluorescence spectroscopy of model humic acid-type polymers. *Geoderma* 47:349.
181. Senesi, N., G. Sposito, G. R. Bradford, and K.M. Holtzclaw. 1991. Residual metal reactivity of humic acids extracted from soil amended with sewage sludge. *Water, Air Soil Pollut.* 55:409.
182. Cambier, P., and G. Sposito. 1991. Interactions of citric acid and synthetic hydroxy-aluminum montmorillonite. *Clays Clay Miner.* 39:158.
183. Kabala, Z. J., and G. Sposito. 1991. A stochastic model of reactive solute transport with time-varying velocity in a heterogeneous aquifer. *Water Resour. Res.* 27:341.
184. Sposito, G. 1991. Effect of chloride ions on sodium-calcium and sodium-magnesium exchange on montmorillonite. *Soil Sci. Soc. Am. J.* 55:965.
185. Cambier, P., and G. Sposito. 1991. Adsorption of citric acid by synthetic pseudoboehmite. *Clays Clay Miner.* 39:369.
186. Rieu, M., and G. Sposito. 1991. Fractal fragmentation, soil porosity, and soil water properties: I. Theory. *Soil Sci. Soc. Am. J.* 55:1231.
187. Rieu, M., and G. Sposito. 1991. Fractal fragmentation, soil porosity, and soil water properties: II. Applications. *Soil Sci. Soc. Am. J.* 55:1239.
188. Brown, A.D., and G. Sposito. 1991. Acid-base chemistry of dissolved organic matter in aqueous leaf extracts: Application to organic acids in throughfall. *J. Environ. Qual.* 20:839.
189. Tam, S.-C., G. Sposito, and N. Senesi. 1991. Spectroscopic and chemical evidence of variability across a pine litter layer. *Soil Sci. Soc. Am. J.* 55:1320.
190. Neal, R.H., and G. Sposito. 1991. Selenium mobility of intermittently irrigated soil columns affected by organic carbon amendment. *J. Environ. Qual.* 20:808.
191. Sposito, G., A. Yang, R.H. Neal, and A. Mackzum. 1991. Selenate reduction in an alluvial soil. *Soil Sci. Soc. Am. J.* 55:1597.

192. Anderson, S.J., and G. Sposito. 1991. Cesium adsorption method for measuring accessible structural surface charge. *Soil Sci. Soc. Am. J.* 55:1569.
193. Thellier, C., G. Sposito, and K.M. Holtzclaw. 1992. Proton effects on quaternary cation exchange and flocculation of Silver Hill illite. *Soil Sci. Soc. Am. J.* 56:427.
194. Sposito, G., and P. Blaser. 1992. Revised quasiparticle model of protonation and metal complexation reactions in an aqueous leaf litter extract. *Soil Sci. Soc. Am. J.* 56:1095.
195. Anderson, S.J., and G. Sposito. 1992. Proton surface charge density in soils with structural and pH-dependent charge. *Soil Sci. Soc. Am. J.* 56:1437.
196. Casey, W.H., and G. Sposito. 1992. On the temperature dependence of mineral dissolution rates. *Geochim. Cosmochim. Acta.* 56:3825.
197. Johnston, C.T., G. Sposito, and C. Erickson. 1992. Vibrational probe studies of water interactions with montmorillonite. *Clays Clay Miner.* 40:722.
198. Gehring, A.U., I.V. Fry, J. Luster, and G. Sposito. 1993. Vanadium (IV) in a multimineral lateritic saprolite: A thermoanalytical and spectroscopic study. *Soil Sci. Soc. Am. J.* 57:868.
199. Gehring, A.U., I.V. Fry, T. Lloyd, and G. Sposito. 1993, 1995. Residual manganese (II) entrapped in single-layer-hydrate montmorillonite interlayers. *Clays Clay Miner.* 41:565; 43:385 (Reply to criticism).
200. Tam, S.-C., and G. Sposito. 1993. Fluorescence spectroscopy of aqueous pine litter extracts: Effects of humification and aluminium complexation. *J. Soil Sci.* 44:513.
201. Luster, J., A. Yang, and G. Sposito. 1993. On the interpretation of "labile aluminum" as determined by reaction with 8-hydroxyquinoline. *Soil Sci. Soc. Am. J.* 57:976.
202. Heil, D., and G. Sposito. 1993. Role of organic matter in the flocculation of illitic soil colloids: I. Effect of counter ions and pH. *Soil Sci. Soc. Am. J.* 57:1241.
203. Heil, D., and G. Sposito. 1993. Role of organic matter in the flocculation of illitic soil colloids: II. Effect of surface charge. *Soil Sci. Soc. Am. J.* 57:1246.
204. Gehring, A.U., I.V. Fry, J. Luster, and G. Sposito. 1993. The chemical form of vanadium (IV) in kaolinite. *Clays Clay Miner.* 41:662.
205. Baham, J., and G. Sposito. 1994. Adsorption of dissolved organic carbon extracted from sewage sludge on montmorillonite and kaolinite in the presence of metal ions. *J. Environ. Qual.* 23:147.
206. Chang, F.-R., and G. Sposito. 1994. The electrical double layer of a disk-shaped clay mineral particle: Effect of particle size. *J. Colloid Interface Sci.* 163:19.

207. Sposito, G., and Dagan, G., 1994. Predicting solute plume evolution in heterogeneous porous formations. *Water Resour. Res.* 30:585.
208. Kabala, Z.J., and G. Sposito. 1994. Statistical moments of reactive solute concentrations in a heterogeneous aquifer. *Water Resour. Res.* 30:759.
209. Yang, A., G. Sposito, and T. Lloyd. 1994. Total luminescence spectroscopy of aqueous pine litter (O-horizon) extracts: Organic ligands and their Al or Cu complexes. *Geoderma* 62:327.
210. Sposito, G. 1994. Steady groundwater flow as a dynamical system. *Water Resour. Res.* 30:2395.
211. Martin-Neto, L., E.M. Vieira, and G. Sposito. 1994. The mechanism of atrazine sorption by humic acid: A spectroscopic study. *Environ. Sci. Technol.* 28:1867.
212. Gehring, A.U., I.V. Fry, J. Luster, and G. Sposito. 1994. Vanadium in sepiolite: A redox-indicator for an ancient closed brine system in the Madrid Basin, Central Spain. *Geochim. Cosmochim. Acta* 58:3345.
213. Skipper, N.T., F.-R. C. Chang, and G. Sposito. 1995. Monte Carlo simulation of interlayer molecular structure in swelling clay minerals. 1. Methodology. *Clays Clay Miner.* 43:285.
214. Skipper, N.T., G. Sposito, and F.-R. C. Chang. 1995. Monte Carlo simulation of interlayer molecular structure in swelling clay minerals. 2. Monolayer hydrates. *Clays Clay Miner.* 43:294.
215. Maurice, P.A., M.F. Hochella, G.A. Parks, G. Sposito, and U. Schwertmann. 1995. Evolution of hematite surface microtopography upon dissolution by simple organic acids. *Clays Clay Miner.* 43:29.
216. Heil, D., and G. Sposito. 1995. Role of organic matter in the flocculation of illitic soil colloids: III. Scanning force microscopy of soil colloids. *Soil Sci. Soc. Am. J.* 59:266.
217. Chorover, J., and G. Sposito. 1995. Surface charge characteristics of kaolinitic tropical soils. *Geochim. Cosmochim. Acta* 59:875.
218. Polubesova, T., J. Chorover, and G. Sposito. 1995. Surface charge characteristics of podzolized soil. *Soil Sci. Soc. Am. J.* 59:772.
219. Chorover, J., and G. Sposito. 1995. Colloid chemistry of kaolinitic tropical soils. *Soil Sci. Soc. Am. J.* 59:1558.
220. Chang, F.-R., N. T. Skipper, and G. Sposito. 1995. Computer simulation of interlayer molecular structure in sodium-montmorillonite hydrates. *Langmuir* 11:2734.
221. Chorover, J., and G. Sposito. 1995. Dissolution behavior of kaolinitic tropical soils. *Geochim. Cosmochim. Acta* 59:3109.

222. Hersman, L., T. Lloyd, and G. Sposito. 1995. Siderophore-promoted dissolution of hematite. *Geochim. Cosmochim. Acta* 59:3327.
223. Cheney, M., G. Sposito, A. E. McGrath, and R. S. Criddle. 1996. Abiotic degradation of 2,4-D on synthetic birnessite: A calorimetric method. *Colloids Surf.* 107:131.
224. Maurice, P., J. Forsythe, L. Hersman, and G. Sposito. 1996. Application of atomic-force microscopy to studies of microbial interactions with hydrous Fe(III) oxides. *Chem. Geol.* 132:33.
225. Hersman, L., P. Maurice, and G. Sposito. 1996. Iron acquisition from hydrous Fe(III) oxides by an aerobic *Pseudomonas* sp. *Chem. Geol.* 132:25.
226. Chang, F.-R., and G. Sposito. 1996. The electrical double-layer of a disk-shaped clay mineral particle: Effects of electrolyte properties and surface charge density. *J. Colloid Interface Sci.* 178:555.
227. Luster, J., T. Lloyd, and G. Sposito. 1996. Multi-wavelength molecular fluorescence spectrometry for quantitative characterization of copper (II) and aluminum (III) complexation by dissolved organic matter in leaf litter extracts. *Environ. Sci. Technol.* 30:1565.
228. Sposito, G., L. Martin-Neto, and A. Yang. 1996. Atrazine complexation by soil humic acids. *J. Environ. Qual.* 25:1203.
229. Perrier, E., M. Rieu, G. Sposito, and G. de Marsily. 1996, 1998. Models of the water retention curve for soils with a fractal pore-size distribution. *Water Resour. Res.* 32:3025; 34:931.
230. Schroth, B., and G. Sposito. 1997. Surface charge properties of kaolinite. *Clays Clay Miner.* 45:85.
231. Sposito, G. 1997. Scaling invariance of the von Smoluchowski rate law. *Colloids Surf. A* 120:101.
232. Sposito, G. 1997. On steady flows with Lamb surfaces. *Int. J. Engin. Sci.* 35:197.
233. Prezzi, M., P.J.M. Monteiro, and G. Sposito. 1997. The alkali-silica reaction. Part I: Use of the double-layer theory to explain the behavior of the reaction-product gels. *Amer. Concrete Inst. Mater. J.* 94:10.
234. Chang, F.-R.C., N.T. Skipper, and G. Sposito. 1997. Monte Carlo and molecular dynamics simulations of interfacial structure in lithium-montmorillonite hydrates. *Langmuir* 13:2074.
235. Sposito, G. 1997. Ergodicity and the "scale effect". *Advan. Water Resour.* 20: 309.
236. Malengreau, N., and G. Sposito. 1997. Short-time dissolution mechanisms of kaolinitic tropical soils. *Geochim. Cosmochim. Acta* 61:4297.

237. Monterio, P.J.M., K. Wang, G. Sposito, M.C. dos Santos, and W.P. de Andrade. 1997, 1998. Influence of mineral admixtures on the alkali-aggregate reaction. *Cement Concrete Res.* 27:1899, 28:1195.
238. Prezzi, M., P.J.M. Monterio, and G. Sposito. 1998. Alkali-silica reaction. Part 2: The effect of chemical additives. *Amer. Concrete Inst. Mater. J.* 95:3.
239. Martin-Neto, L., R. Rosell, and G. Sposito. 1998. Correlation of spectroscopic indicators of humification with mean annual rainfall along a temperate grassland climosequence. *Geoderma* 81:305.
240. Cheney, M.A., J.Y. Shin, D.E. Crowley, S. Alvey, N. Malengreau, and G. Sposito. 1998. Atrazine dealkylation on a manganese oxide surface. *Colloids Surf. A* 137:267.
241. Chang, F.-R.C., N.T. Skipper, and G. Sposito. 1998. Monte Carlo and molecular dynamics simulations of electrical double layer structure in potassium-montmorillonite hydrates. *Langmuir* 14:1201.
242. Greathouse, J.A., and G. Sposito. 1998. Monte Carlo and molecular dynamics studies of interlayer structure in $\text{Li}(\text{H}_2\text{O})_3$ -smectites. *J. Phys. Chem. B* 102:2406.
243. Sposito, G., and S.W. Weeks. 1998. Tracer advection by steady groundwater flow in a stratified aquifer. *Water Resour. Res.* 34:1051.
244. Sposito, G. 1998. A note on helicity conservation in steady fluid flows. *J. Fluid Mech.* 363:325.
245. Schroth, B.K., and G. Sposito. 1998. Effect of landfill leachate organic acids on trace metal adsorption by kaolinite. *Environ. Sci. Technol.* 32:1404.
246. Kabala, Z. J., and G. Sposito. 1998. Technical comment on: "On the stochastic theory of solute transport by unsteady and steady groundwater flow in heterogeneous aquifers," by M.L. Kavvas and A. Karakas. *J. Hydrol.* 207:136. (NR)
247. Sposito, G. 1998, 1999. On points of zero charge. *Environ. Sci. Technol.* 32:2815; 33:208.
248. Weeks, S.W., and G. Sposito. 1998. Mixing and stretching efficiency in steady and unsteady groundwater flows. *Water Resour. Res.* 34:3315.
249. Sposito, G., S.-H. Park, and R. Sutton. 1999. Monte Carlo simulation of the total radial distribution function for interlayer water in sodium and potassium montmorillonites. *Clays Clay Miner.* 47:192.
250. Rodríguez, F.A., P.J.M. Monteiro, and G. Sposito. 1999, 2000. The alkali-silica reaction: The surface charge density of silica and its effect on the expansive pressure. *Cement Concrete Res.* 29:527, 30:503.

251. Sposito, G., N.T. Skipper, R. Sutton, S.-H. Park, A.K. Soper, and J.A. Greathouse. 1999. Surface geochemistry of the clay minerals. *Proc. Natl. Acad. Sci. USA* 96:3358.
252. Rodríguez, F.A., P.J.M. Monteiro, and G. Sposito. 1999. Surface charge density of silica suspended in water-acetone mixtures. *J. Colloid Interface Sci.* 211:408.
253. Kraemer, S.M., S.-F. Cheah, R. Zapf, J. Xu, K.N. Raymond, and G. Sposito. 1999. Effect of hydroxamate siderophores on Fe release and Pb(II) adsorption by goethite. *Geochim. Cosmochim. Acta* 63:3003.
254. Wang, D., J.Y. Shen, M.A. Cheney, G. Sposito, and T. Spiro. 1999. Manganese dioxide as a catalyst for oxygen-independent atrazine dealkylation. *Environ. Sci. Technol.* 33:3160.
255. Nasser, A., G. Sposito, and M.A. Cheney. 2000. Mechanochemical degradation of 2, 4-D adsorbed on synthetic birnessite. *Colloids Surf. A* 163:117.
256. Derrendinger, L., and G. Sposito. 2000. Flocculation kinetics and cluster morphology in illite/NaCl suspensions. *J. Colloid Interface Sci.* 222:1.
257. Park, S.-H., and G. Sposito. 2000. Monte Carlo simulation of total radial distribution functions for interlayer water in Li-, Na-, and K-montmorillonite hydrates. *J. Phys. Chem. B* 104:4642-4648.
258. Dubbin, W.E., G. Sposito, and M. Zavarin. 2000. X-ray absorption spectroscopic study of Cu-glyphosate adsorbed by microcrystalline gibbsite. *Soil Sci.* 165:699.
259. Greathouse, J.A., K. Refson, and G. Sposito. 2000. Molecular dynamics simulation of water mobility in magnesium-smectite hydrates. *J. Am. Chem. Soc.* 122:11459.
260. Martin-Neto, L., D.G. Tragheta, C.M.P. Vaz, S. Crestana, and G. Sposito. 2001. On the interaction mechanisms of atrazine and hydroxyatrazine with humic substances. *J. Environ. Qual.* 30:520.
261. Sposito, G. 2001. Methods of quantum field theory in the statistical physics of subsurface solute transport. *Transport Porous Media* 42:181.
262. Sposito, G. 2001. Topological groundwater hydrodynamics. *Advan. Water Resour.* 24:793.
263. Sutton, R., and G. Sposito. 2001. Molecular simulation of interlayer structure and dynamics in 12.4 Å Cs-smectite hydrates. *J. Colloid Interface Sci.* 237:174.
264. Struyk, D., and G. Sposito. 2001. Redox properties of standard humic acids. *Geoderma* 102:329.
265. Rodríguez, F.A., P.J.M. Monteiro, and G. Sposito. 2001. Alkali-silica reaction: The effect of monovalent and bivalent cations on the surface charge of opal. *Cement Concrete Res.* 31:1549.

266. Fontes, M.P.F., O.A. de Camargo, and G. Sposito. 2001. Electrochemistry of colloidal particles and its relationship with the mineralogy of highly-weathered soils. *Scientia Agricola* 58:627.
267. Cocozza, C., C.C.G. Tsao, S.-F. Cheah, S.M. Kraemer, K.N. Raymond, T.M. Miano, and G. Sposito. 2002. Temperature dependence of goethite dissolution promoted by trihydroxamate siderophores. *Geochim. Cosmochim. Acta* 66:431.
268. Cervini-Silva, J., and G. Sposito. 2002. Steady-state dissolution kinetics of aluminum-goethite in the presence of desferrioxamine B and oxalate ligands. *Environ. Sci. Technol.* 36:337.
269. Kraemer, S.M., J. Xu, K.N. Raymond, and G. Sposito. 2002. Adsorption of Pb(II) and Eu(III) by oxide minerals in the presence of natural and synthetic hydroxamate siderophores. *Environ. Sci. Technol.* 36:1287.
270. Segré, N., P.J.M. Monteiro, and G. Sposito. 2002. Surface characterization of recycled tire rubber to be used in cement paste matrix. *J. Colloid Interface Sci.* 248:521.
271. Lo, W.-C., G. Sposito, and E.L. Majer. 2002. Immiscible two-phase fluid flows in deformable porous media. *Advan. Water Resour.* 25:1105.
272. Park, S.-H., and G. Sposito. 2002. Structure of water adsorbed on a mica surface. *Phys. Rev. Lett.* 89:85501.
273. Sutton, R., and G. Sposito. 2002. Animated molecular dynamics simulations of hydrated caesium-smectite interlayers. *Geochem. Trans.* 3:73.
274. Manceau, A., N. Tamura, M. A. Marcus, A. A. MacDowell, R. S. Celestre, R. E. Sublett, G. Sposito and H. A. Padmore. 2002. Deciphering Ni sequestration in soil ferromanganese nodules by combining X-ray fluorescence, absorption, and diffraction at micrometer scales of resolution. *Amer. Mineralogist* 87:1494.
275. Manceau, A., N. Tamura, R. S. Celestre, A. A. MacDowell, N. Geoffroy, G. Sposito, and H. A. Padmore. 2003. Molecular-scale speciation of Zn and Ni in soil ferromanganese nodules from loess soils of the Mississippi Basin. *Environ. Sci. Technol.* 37:75.
276. Cheah, S.-F., S. M. Kraemer, J. Cervini-Silva, and G. Sposito. 2003. Steady-state dissolution kinetics of goethite in the presence of desferrioxamine B and oxalate ligands: Implications for the microbial acquisition of iron. *Chem. Geol.* 198:63.
277. Park, S.-H. and G. Sposito. 2003. Do montmorillonite surfaces promote methane hydrate formation? *J. Phys. Chem. B* 107:2281.
278. Villalobos, M., B. Toner, J. Bargar, and G. Sposito. 2003. Characterization of the manganese oxide produced by *Pseudomonas putida* Strain MnB1. *Geochim. Cosmochim. Acta* 67:2649.
279. Refson, K., S.-H. Park, and G. Sposito. 2003. Ab initio computational crystallography of 2:1 clay minerals: I. Pyrophyllite 1-Tc. *J. Phys. Chem. B* 107:13376.

280. Shomglin, K., L. Turanli, H. -R. Wenk, P. J. M. Monteiro, and G. Sposito. 2003. The effects of potassium and rubidium hydroxide on the alkali–silica reaction. *Cement Concrete Res.* 33:1825.
281. Bourg, I. C., A. C. M. Bourg, and G. Sposito. 2003. Modeling diffusion and adsorption in compacted bentonite: A critical review. *J. Contam. Hydrol.* 61:293.
282. Parker, D. L., G. Sposito, and B. M. Tebo. 2004. Manganese (III) binding to a pyoverdine siderophore produced by a manganese (II)-oxidizing bacterium. *Geochim. Cosmochim. Acta* 68:4809.
283. Toner, B. M., S. Fakra, M. Villalobos, T. Warwick, and G. Sposito. 2005. Spatially resolved characterization of biogenic manganese oxide production within a bacterial biofilm. *Appl. Environ. Microbiol.* 71:1300.
284. Villalobos, M., J. Bargar, and G. Sposito. 2005. Mechanisms of Pb(II) sorption on a biogenic manganese oxide. *Environ. Sci. Technol.* 39:569.
285. Lo, W.-C., G. Sposito, and E. Majer. 2005. Wave propagation through elastic porous media containing two immiscible fluids. *Water Resour. Res.* 41(2):W02025 (20 pp.).
286. Toner, B. and G. Sposito. 2005. Reductive dissolution of biogenic manganese oxides in the presence of a hydrated biofilm. *Geomicrobiol. J.* 22:171.
287. Dubbin, W. E. and G. Sposito. 2005. Copper-glyphosate sorption to microcrystalline gibbsite in the presence of soluble Keggin Al₁₃ polymers. *Environ. Sci. Technol.* 39:2509.
288. Sutton, R., G. Sposito, M. S. Diallo, and H.-R. Schulten. 2005. Molecular simulation of a model of dissolved organic matter. *Environ. Toxicol. Chem.* 24:1902.
289. Peretyazhko, T. and G. Sposito. 2005. Iron(III) reduction and phosphorus solubilization in humid tropical forest soils. *Geochim. Cosmochim. Acta* 69:3643.
290. Duckworth, O. W. and G. Sposito. 2005. Siderophore-manganese(III) interactions. I. Air-oxidation of manganese(II) promoted by Desferrioxamine B. *Environ. Sci. Technol.* 39:6037.
291. Duckworth, O. W. and G. Sposito. 2005. Siderophore-manganese(III) interactions. II. Manganite dissolution promoted by Desferrioxamine B. *Environ. Sci. Technol.* 39:6045.
292. Toner, B., A. Manceau, M. A. Marcus, D. B. Millet, and G. Sposito. 2005. Zinc sorption by a bacterial biofilm. *Environ. Sci. Technol.* 39:8288.
293. Sutton, R. and G. Sposito. 2005. Molecular structure in soil humic substances: The new view. *Environ. Sci. Technol.* 39:9009.
294. Lo, W.-C., G. Sposito, and E. Majer. 2006. Low-frequency dilatational wave propagation through fully-saturated porous media. *Advan. Water Resour.* 29:408.

295. Sposito, G. 2006. Chaotic solute advection by unsteady groundwater flow. *Water Resour. Res.* 42:W06D03, doi:10.1029/2005WR004518 (6 pp.).
296. Toner, B., A. Manceau, S. M. Webb, and G. Sposito. 2006. Zinc sorption by biogenic hexagonal birnessite particles within a hydrated biofilm. *Geochim. Cosmochim. Acta* 70:27.
297. Villalobos, M., B. Lanson, A. Manceau, B. Toner, and G. Sposito. 2006. Structural model for the biogenic Mn oxide produced by *Pseudomonas putida*. *Am. Miner.* 91:489.
298. Bourg, I. C., G. Sposito, and A. C. M. Bourg. 2006. Tracer diffusion in compacted water-saturated bentonite. *Clays Clay Miner.* 54:363.
299. Sutton, R. and G. Sposito. 2006. Molecular simulation of humic substance-Ca-montmorillonite complexes. *Geochim. Cosmochim. Acta* 70:3566.
300. Peretyazhko, T. and G. Sposito. 2006. Reducing capacity of terrestrial humic acids. *Geoderma* 137:140.
301. Lo, W.-C., G. Sposito, and E. Majer. 2007. Low-frequency dilatational wave propagation through unsaturated porous media containing two immiscible fluids. *Transport Porous Media* 68:91.
302. Bourg, I. C. and G. Sposito. 2007. Molecular dynamics simulations of kinetic isotope fractionation during the diffusion of ionic species in water. *Geochim. Cosmochim. Acta* 71:5583.
303. Bourg, I. C., G. Sposito, and A. C. M. Bourg. 2007. Modeling the acid-base surface chemistry of montmorillonite. *J. Colloid Interface Sci.* 312:297.
304. Peña, J., O. W. Duckworth, J. R. Bargar, and G. Sposito. 2007. Dissolution of hausmannite (Mn_3O_4) in the presence of the trihydroxamate siderophore desferrioxamine B. *Geochim. Cosmochim. Acta* 71:5661.
305. Duckworth, O. W. and G. Sposito. 2007. Siderophore-promoted dissolution of synthetic and biogenic layer type Mn oxides. *Chem. Geol.* 242:500.
306. Sposito, G. 2007. Response to “Comments on ‘Fractal fragmentation, soil porosity, and soil water properties: I. Theory’”. *Soil Sci. Soc. Am. J.* 71:633. (NR)
307. Bourg, I. C., G. Sposito, and A. C. M. Bourg. 2007. Modeling cation diffusion in compacted water-saturated sodium bentonite at low ionic strength. *Environ. Sci. Technol.* 41:8118.
308. Bourg, I. C., and G. Sposito. 2008. Isotopic fractionation of noble gases by diffusion in liquid water: Molecular dynamics simulations and hydrologic applications. *Geochim. Cosmochim. Acta* 72:2237.
309. Kwon, K. D., K. Refson, and G. Sposito. 2008. Defect-induced photoconductivity in layered manganese oxides: A density functional theory study. *Phys. Rev. Lett.* 100:146601.

310. Duckworth, O. W., J. R. Bargar, and G. Sposito. 2008. Sorption of ferric iron from ferrioxamine B to synthetic and biogenic layer type manganese oxides. *Geochim. Cosmochim. Acta* 72:3371 .
311. Aristilde, L., and G. Sposito. 2008. Molecular modeling of metal complexation by a fluoroquinolone antibiotic. *Environ. Toxicol. Chem.* 27:2304.
312. Bourg, I. C., G. Sposito, and A. C. M. Bourg. 2008. Modeling the diffusion of Na⁺ in compacted water-saturated Na-bentonite as a function of pore water ionic strength. *Appl. Geochem.* 23:3635.
313. Rakshit, S., M. Uchimiya, and G. Sposito. 2009. Iron(III) bioreduction in soil in the presence of added humic substances. *Soil Sci. Soc. Am. J.* 73:65.
314. Duckworth, O. W., S. J. M. Holmström, J. Peña, and G. Sposito. 2009. Biogeochemistry of iron oxidation in a circumneutral freshwater habitat. *Chem. Geol.* 260:149.
315. Lo, W.-C., G. Sposito, and E. Majer. 2009. Analytical decoupling of poroelasticity equations for acoustic wave propagation and attenuation in a porous medium containing two immiscible fluids. *J. Engin. Math.* 64:219.
316. Aristilde, L., and G. Sposito. 2009. Binding of ciprofloxacin by humic substances: A molecular dynamics study. *Environ. Toxicol. Chem.* 44:1444.
317. Duckworth, O. W., J. Bargar, and G. Sposito. 2009. Quantitative structure-activity relationships for aqueous metal-siderophore complexes. *Environ. Sci. Technol.* 43:343.
318. Kwon, K. D., K. Refson, and G. Sposito. 2009. Zinc surface complexes on birnessite: A density functional theory study. *Geochim. Cosmochim. Acta* 73:1273.
319. Duckworth, O. W., J. R. Bargar, A. A. Jarzecki, O. Oyerinde, T. G. Spiro, and G. Sposito. 2009. The exceptionally stable Co(III)-desferrioxamine B complex. *Marine Chem.* 113:114.
320. Duckworth, O. W., J. Bargar, and G. Sposito. 2009. Coupled biogeochemical cycling of iron and manganese as mediated by microbial siderophores. *Biometals* 22:605.
321. Kwon, K.D., K. Refson, and G. Sposito. 2009. On the role of Mn(IV) vacancies in the photoreductive dissolution of hexagonal birnessite. *Geochim. Cosmochim. Acta* 73:3981.
322. Spiro, T. G., J. R. Bargar, G. Sposito, and B. M. Tebo. 2010. Bacteriogenic manganese oxides. *Acc. Chem. Res.* 43:2.
323. Aristilde, L., A. Melis, and G. Sposito. 2010. Inhibition of photosynthesis by a fluoroquinolone antibiotic. *Environ. Sci. Technol.* 44:1444.
324. Lo, W.-C., G. Sposito, E. Majer, and C.-L. Yeh. 2010. Motional modes of dilatational waves in elastic porous media containing two immiscible fluids. *Advan. Water Resour.* 33:304.

325. Bourg, I. C., F. M. Richter, J. N. Christensen, and G. Sposito. 2010. Isotopic mass-dependence of metal cation diffusion coefficients in liquid water. *Geochim. Cosmochim. Acta* 74:2249.
326. Bourg, I. C., and G. Sposito. 2010. Connecting the molecular scale to the continuum scale for diffusion processes in smectite-rich porous media. *Environ. Sci. Technol.* 44:2085.
327. Peña, J., K. D. Kwon, K. Refson, J. R. Bargar, and G. Sposito. 2010. Mechanisms of nickel sorption by a bacteriogenic birnessite. *Geochim. Cosmochim. Acta* 74:3076.
328. Kwon, K. D., and G. Sposito. 2010. Reactivity of biogenic manganese oxide for metal sequestration and photochemistry: Computational solid state physics study. *J. Miner. Soc. Korea* 23: 161. (in Korean)
329. Kwon, K. D., K. Refson, and G. Sposito. 2010. Surface complexation of Pb(II) by hexagonal birnessite nanoparticles. *Geochim. Cosmochim. Acta* 74:6731.
330. Kwon, K. D., K. Refson, S. Bone, R. Qiao, W. Yang, Z. Liu, and G. Sposito. 2011. Magnetic ordering in mackinawite (tetragonal FeS): Evidence for strong itinerant spin fluctuations. *Phys. Rev. B.* 83:.064402.
331. Bourg, I., and G. Sposito. 2011. Molecular dynamics simulations of the electrical double layer on smectite surfaces contacting concentrated mixed electrolyte (NaCl-CaCl₂) solutions. *J. Colloid Interface Sci.* 360:701.
332. Peña, J., J. Bargar, and G. Sposito. 2011. Role of bacterial biomass in the sorption of Ni by biomass-birnessite assemblages. *Environ. Sci. Technol.* 45:7338.
333. Lo, W-C, G. Sposito, and Y-H Huang. 2012. Modeling seismic stimulation: Enhanced non-aqueous fluid extraction from saturated porous media under pore-pressure pulsing at low frequencies. *J. Appl. Geophys.* 78:77.
334. Nielsen, L. C., I. C. Bourg, and G. Sposito. 2012. Predicting CO₂-water interfacial tension under pressure and temperature conditions of geologic CO₂ storage. *Geochim. Cosmochim. Acta* 81:28.
335. Harrington, J. M., D. L. Parker, J. R. Bargar, A. A. Jarzecki, B. M. Tebo, G. Sposito, and O. Duckworth. 2012. Structural dependence of Mn complexation by siderophores: Donor group dependence on complex stability and reactivity. *Geochim. Cosmochim. Acta* 88:106 .
336. Kwon, K. D., K. Refson, and G. Sposito. 2013. Understanding the trends in transition metal sorption by vacancy sites in birnessite. *Geochim. Cosmochim. Acta* 101:222.
337. Aristilde, L., and G. Sposito. 2013. Complexes of the antimicrobial Ciprofloxacin with soil, peat, and aquatic humic substances. *Environ. Toxicol. Chem.* 32:1467.
338. Amundson, R. and G. Sposito. 2013. Bridging the divide: Soil resources and the geosciences on a cultivated planet. In Bickford, M.E. (ed.), *The Impact of the Geological Sciences on Society*. Geological Society of America Special Paper 501:69-80.

339. Sposito, G. 2013. Green water and global food security. *Vadose Zone J.* 12: doi:10.2136/vzj2013.02.0041.
340. Lo, W.-C., and G. Sposito. 2013. Acoustic waves in unsaturated soils. *Water Resour. Res.* 49:5674.
341. Lo, W.-C., G. Sposito, and H. Chu. 2014. Poroelastic theory of consolidation in unsaturated soils. *Vadose Zone J.* 13: doi:10.2136/vzj2013.07.0117 (12 pp.).
342. Bone, S. E., J. R. Bargar, and G. Sposito. 2014. Mackinawite (FeS) reduces mercury(II) under sulfidic conditions. *Environ. Sci. Technol.* 48:10681.
343. Smith, C. J., J. D. Oster, and G. Sposito. 2015. Potassium and magnesium in irrigation water quality assessment. *Agric. Water Manage.* 157:59.
344. Kwon, K. D., K. Refson, and G. Sposito. 2015. Transition metal incorporation into mackinawite (tetragonal FeS). *Am. Mineral.* 100:1509.
345. Peña, J., J. R. Bargar, and G. Sposito. 2015. Copper sorption by the edge surfaces of synthetic birnessite nanoparticles. *Chem. Geol.* 396:196.
346. Simanova, A., K. D. Kwon, S. E. Bone, J. R. Bargar, K. Refson, G. Sposito, and J. Peña. 2015. Probing the sorption reactivity of the edge surfaces in birnessite nanoparticles using nickel(II). *Geochim. Cosmochim. Acta* 164:191.
347. Newton, A. G., and G. Sposito. 2015. Molecular Dynamics Simulation of pyrophyllite edge surface structure, surface energies, and solvent accessibility. *Clays Clay Miner.* 63:278.
348. Oster, J. D., G. Sposito, and C. J. Smith. 2016. Potassium and magnesium in irrigation water quality assessment. *Calif. Agric.* 70:71.
349. Assouline, S., K. Narkis, R. Gherabli, and G. Sposito. 2016. Combined effect of sodicity and organic matter on soil properties under long-term irrigation with treated wastewater. *Vadose Zone J.* 15:DOI:10.2136/vzj2015.12.0158 (10 pp.).
350. Lo, W-C, G. Sposito, J-W Lee, and H. Chu. 2016. One-dimensional consolidation in unsaturated soils under cyclic loading. *Advan. Water Resour.* 91:122.
351. Tournassat, C., I. C. Bourg, M. Holmboe, G. Sposito, and C. Steefel. 2016. Molecular dynamics simulations of anion exclusion in clay interlayer nanopores. *Clays Clay Miner.* 64:374.
352. Sposito, G., J. D. Oster, C. J. Smith, and S. Assouline. 2016. Assessing soil permeability impacts from irrigation with marginal-quality waters. *CAB Reviews* 11: No. 15 (7pp.) DOI:10.1079/PAVSNNR201611015
353. Lammers, L. N., I. C. Bourg, M. Okumura, K. Kolluri, G. Sposito, and M. Machida. 2017. Molecular dynamics simulations of cesium adsorption on illite nanoparticles. *J. Colloid Interface Sci.* 490:608.

354. Myers, R., G. Geng, J. Li, E. D. Rodríguez, J. Ha, P. Kidkhunthod, G. Sposito, L. N. Lammers, A. P. Kircheim, and P. J. M. Monteiro. 2017. Role of adsorption phenomena in cubic tricalcium aluminate dissolution. *Langmuir* 33:45.
355. Kwon, K. D., and G. Sposito. 2017. *Dirac's dream*: Understanding metal sorption by geomedia using density functional theory. *Chem. Geol.* 464:4.
356. Sposito, G. 2017. Understanding the Budyko equation. *Water* 9(4), 236; doi:10.3390/w9040236.
357. Sposito, G. 2017. Incorporating the vadose zone into the Budyko framework. *Water* 9, 698; doi:10.3390/w9090698.
358. Qadir, M., Schubert, S., Oster, J. D., Sposito, G., Minhas, P. S., Cheraghi, S. A. M., Murtaza, G., Mirzabaev, A., and Saqib, M. 2018. High-magnesium waters and soils: Emerging environmental and food security constraints. *Sci. Total Environ.* 642:1108.
359. Fernandez-Martínez, a., Tao, J., Wallace, A. F., Bourg, I. C., Johnson, M. R., De Yoreo, J. J., Sposito, G., Cuello, G. J., and Charlet, L. 2020. Curvature-induced hydrophobicity at imogolite-water interfaces. *Environ. Sci. Nano* doi:10.1039/d0en00304b

SEMI-TECHNICAL ARTICLES

1. Sposito, G. Soil Chemistry. *McGraw-Hill Encyclopedia of Science and Technology*, 4th Ed. Vol. 12:491-497, 1977; *ibid.*, 5th Ed. Vol. 12:548-555, 1982; *ibid.*, 6th Ed. Vol. 16:536-544, 1987; *ibid.*, 7th Ed. Vol. 16:568-575, 1992; *ibid.*, 8th Ed. Vol. 16:609-619, 1996; *ibid.*, 9th Ed. 16:643, 2002. McGraw-Hill Book Co., New York.
2. Strathouse, S. M., and G. Sposito. 1980. Geologic nitrogen in soils may pose hazard. *Calif. Agric.* 34:20.
3. Sposito, G. 1982. Trace-metal complexation by sewage sludge. *McGraw-Hill Yearbook of Science and Technology*, pp. 413-414.
4. Sposito, G. 1991. Thoughts on measuring the surface charge of hydroxylated minerals suspended in aqueous solution. *CMS News*, March 1991, pp. 17-19.
5. Sposito, G., 1992. How plants affect soils: Hans Jenny and the "biotic factor" of soil formation. *Fremontia* 20:12.
6. Amundson, R., P. Gersper, A. Schultz, and G. Sposito. 1992. Hans Jenny. *In Memoriam*, pp. 79-81. Academic Senate, University of California, Berkeley, CA.

7. Sposito, G. 1997. Fractals in soil chemistry. *McGraw-Hill Yearbook of Science and Technology*, pp.421-424.
 8. Sposito, G. 1998. Quand la terre a la fièvre. *Courrier de la Planète*, No. 47, September-October, p. 20.
 9. Elliott, W.C. *et al.* 2000. Research opportunities in low-temperature and environmental geochemistry. *GSA Today* 10 (9):10. (www.geo.nsf.gov/ear/programs/gepage.html)
- Note:* Articles 9 through 54 also appear on the CD-ROM, *Encyclopaedia Britannica 2002*.
10. Sposito, G. 2001. Soil. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 11. Sposito, G. 2001. Horizon. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 12. Sposito, G. 2001. Humic acid. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 13. Sposito, G. 2001. Fulvic acid. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 14. Sposito, G. 2001. Alfisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 15. Sposito, G. 2000. Andisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 16. Sposito, G. 2001. Aridisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 17. Sposito, G. 2001. Entisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 18. Sposito, G. 2001. Gelisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 19. Sposito, G. 2001. Histosol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 20. Sposito, G. 2001. Inceptisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 21. Sposito, G. 2001. Mollisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 22. Sposito, G. 2001. Oxisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 23. Sposito, G. 2001. Spodosol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 24. Sposito, G. 2001. Ultisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 25. Sposito, G. 2001. Vertisol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 26. Sposito, G. 2001. Andosol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.
 27. Sposito, G. 2001. Arenosol. *Encyclopæ dia Britannica online*. URL: www.britannica.com.

28. Sposito, G. 2001. Histosol. *Encyclopædia Britannica online*. URL: www.britannica.com.
29. Sposito, G. 2001. Vertisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
30. Sposito, G. 2001. Fluvisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
31. Sposito, G. 2001. Gleysol. *Encyclopædia Britannica online*. URL: www.britannica.com.
32. Sposito, G. 2001. Leptosol. *Encyclopædia Britannica online*. URL: www.britannica.com.
33. Sposito, G. 2001. Regosol. *Encyclopædia Britannica online*. URL: www.britannica.com.
34. Sposito, G. 2001. Calcisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
35. Sposito, G. 2001. Gypsisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
36. Sposito, G. 2001. Solonchak. *Encyclopædia Britannica online*. URL: www.britannica.com.
37. Sposito, G. 2001. Solonetz. *Encyclopædia Britannica online*. URL: www.britannica.com.
38. Sposito, G. 2001. Chernozem. *Encyclopædia Britannica online*. URL: www.britannica.com.
39. Sposito, G. 2001. Kastanozem. *Encyclopædia Britannica online*. URL: www.britannica.com.
40. Sposito, G. 2001. Phaeozem. *Encyclopædia Britannica online*. URL: www.britannica.com.
41. Sposito, G. 2001. Acrisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
42. Sposito, G. 2001. Alisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
43. Sposito, G. 2001. Ferralsol. *Encyclopædia Britannica online*. URL: www.britannica.com.
44. Sposito, G. 2001. Lixisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
45. Sposito, G. 2001. Nitisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
46. Sposito, G. 2001. Plinthosol. *Encyclopædia Britannica online*. URL: www.britannica.com.
47. Sposito, G. 2001. Luvisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
48. Sposito, G. 2001. Planosol. *Encyclopædia Britannica online*. URL: www.britannica.com.
49. Sposito, G. 2001. Podzol. *Encyclopædia Britannica online*. URL: www.britannica.com.
50. Sposito, G. 2001. Albeluvisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
51. Sposito, G. 2001. Anthrosol. *Encyclopædia Britannica online*. URL: www.britannica.com.

52. Sposito, G. 2001. Cambisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
53. Sposito, G. 2001. Durisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
54. Sposito, G. 2001. Cryosol. *Encyclopædia Britannica online*. URL: www.britannica.com.
55. Sposito, G. 2001. Umbrisol. *Encyclopædia Britannica online*. URL: www.britannica.com.
56. Sposito, G. 2003. How to manage “soil quality” key question for farmers and scientists. *California Agriculture* 52:34.
56. Villalobos, M., J. Bargar, and G. Sposito. 2005. Trace metal retention on biogenic manganese oxide nanoparticles. *Elements* 1:223.
57. Sposito, G. 2005. Foreword. In Patrick J. Sullivan, Franklin J. Agardy, and James J. J. Clark, *The Environmental Science of Drinking Water*, pp. ix-x. Elsevier Butterworth Heinemann, Oxford, U.K.
58. Sposito, G. 2005. “Hurricane Prediction.” Berkeley Groks Science Show (Podcast), November 23, 2005. www.podcastdirectory.com/podcasts/index.php?iid=2959.
59. Duckworth, O. W., J. Bargar, and G. Sposito. 2009. Sorption of ferric iron from siderophore complexes by layer type manganese oxides. *SSRL Science Highlight*, January 2009. 4 pp.
60. Hampton, T., and G. Sposito. 2010. UC must put emphasis on education, not brand. *San Francisco Chronicle*, July 13, 2010, p. A08.
61. Sposito, G. 2013. Maximizing green water through rhizospheres and plant-soil feedbacks. *CSA News* 58(10):7 (2013)
62. Mitchell, J., et al. 2016. Conservation agriculture: Systems thinking for sustainable farming. *California Agriculture* 70:53.

TRANSLATIONS

1. Formation of o-phosphates. I. Determination of aluminum o-phosphates in the presence of sodium ions. 1977. *Zeitschrift für Pflanzenernährung und Bodenkunde* 140:91. [Translation of "Bestimmung von Aluminium-ortho-Phosphaten in einem Dreikomponentensystem in anwesenheit von Na" by J. A. Veith]

2. Formation of X-ray amorphous aluminum o-phosphates from precipitation and secondary precipitation. 1978. *Zeitschrift für Pflanzenernaehrung und Bodenkunde* 141:29. [Translation of "Bildung röntgenamorpher Aluminium-ortho-Phosphate aus den Phasen flüssig in Anwesenheit von Na" by J. A. Veith]

(Only the English translations of these two papers, made by G. Sposito, were submitted for publication.)

INVITED CHAPTERS

1. Page, A. L., A. C. Chang, G. Sposito, and S. Mattigod. 1981. Trace elements in wastewater: Their effects on plant growth and composition and behavior in soils. In I. K. Iskandar (ed.), *Modeling Wastewater Renovation: Land Treatment*, Chap. 8. John Wiley and Sons, New York.
2. Sposito, G. 1982. Trace-metal complexation by sewage sludge. In S. P. Parker (ed.), *McGraw-Hill Yearbook of Science and Technology*, pp. 413-414.
3. Sposito, G. 1983. The chemical forms of trace metals in soils. In I. Thornton (ed.), *Applied Environmental Geochemistry*, pp. 123-170. Academic Press, New York.
4. Sposito, G., V. K. Gupta, and R. N. Bhattacharya. 1983. Foundational theories of solute transport in porous media: A critical review. *Progress in Engineering Science*, Vol. 11. *Flow through Porous Media*, pp. 76-85. [Reprinting of technical journal article 63, chosen as an "outstanding paper in hydrology" by the editors.]
5. Sposito, G., and S. V. Mattigod. 1984. On the chemical foundation of the sodium adsorption ratio. In R. Levy (ed.), *Chemistry of Irrigated Soils*, pp. 174-180. Van Nostrand Reinhold, Florence, Kentucky. [Reprinting of technical journal article 37, chosen as a "Benchmark Paper" by the editors.]
6. Sposito, G., and A. L. Page. 1984. Cycling of metal ions in the soil environment. In H. Sigel (ed.), *Metal Ions in Biological Systems*, Vol. 18. *Circulation of Metals in the Environment*, pp. 287-332.
7. Sposito, G. 1986. Thermodynamics of the soil solution. In D. L. Sparks (ed.), *Soil Physical Chemistry*, pp. 147-178. C.R.C. Press, Boca Raton, Florida.
8. Sposito, G. 1986. Distribution of potentially hazardous trace metals. In H. Sigel (ed.) *Metal Ions in Biological Systems*, Vol. 20. *Concepts on Metal Ion Toxicity*, pp. 1-20. Marcel Dekker, New York.

9. Elprince, A. M., A. P. Vanselow, and G. Sposito. 1986. Heterovalent, ternary cation exchange equilibria: NH_4^+ - Ba^{2+} - La^{3+} exchange on montmorillonite. In A. Elprince (ed.), *The Chemistry of Soil Solutions*, pp. 98-103. Van Nostrand Reinhold, New York. [Reprinting of technical journal article 74, chosen as a "Benchmark Paper" by the editor.]
10. Sposito, G., and R. Prost. 1986. Structure of water adsorbed on smectites. In A. Elprince (ed.), *The Chemistry of Soil Solutions*, pp. 31-50. Van Nostrand Reinhold, New York. [Reprinting of technical journal article 90, chosen as a "Benchmark Paper" by the editor.]
11. Sposito, G. 1986. Distinguishing adsorption from surface precipitation. In J. A. Davis and K. F. Hayes (eds.), *Geochemical Processes at Mineral Surfaces*. ACS Symp. Series No. 323. Am. Chem. Soc., Washington, D.C.
12. Veith, J. A., and G. Sposito. 1986. On the use of the Langmuir equation in the interpretation of "adsorption" phenomena. In R. D. Harter (ed.), *Adsorption Phenomena*, pp. 317-322. Van Nostrand Reinhold, New York. [Reprinting of technical journal article 40, chosen as a "Benchmark Paper" by the editor.]
13. Sposito, G. 1987. The "physics" of soil water physics. In E. R. Landa and S. Ince (eds.), *History of Geophysics*, Vol. 3, pp. 93-98. [Reprinting of technical journal article 130, chosen as an "outstanding paper in the history of hydrology" by the editors.]
14. Sposito, G. 1990. Molecular models of ion adsorption on mineral surfaces. In M.F. Hochella, Jr. and A. F. White (eds.), *Mineral-Water Interface Geochemistry*, Chap. 6. Mineralogical Society of America, Washington, D.C.
15. Sposito, G., D. A. Barry, Z. J. Kabala. 1991. Stochastic differential equations in the theory of solute transport through inhomogeneous porous media. In M. Y. Corapcioglu (ed.), *Advances in Porous Media*, Vol. 1, Chap. 5. Elsevier, Amsterdam.
16. Sposito, G. 1992. Characterization of particle surface charge. In J. Buffle and H.P. van Leeuwen (eds.), *Environmental Particles*, Vol. I, Chap. 7. Lewis Publishers, Chelsea, MI.
17. Sposito, G. 1992. Promoting science and engineering careers in academe. In M. L. Matyas and L. S. Dix (eds.), *Science and Engineering Programs: On Target for Women?*, Chap. 6. National Academy Press, Washington, D.C.
18. Sposito, G. 1993. Surface complexation of metals by natural colloids. In J.A. Marinsky and Y. Marcus (eds.), *Ion Exchange and Solvent Extraction*, Vol. 11, pp. 211-236. Marcel Dekker, New York.
19. Sposito, G. 1993. Solute lifetime correlations in chemical transport through field soils. In D. Russo and G. Dagan (eds.), *Water Flow and Solute Transport in Soils*, Chap. 5. Springer-Verlag, Berlin.

20. Johnston, C.T., G. Sposito, and W.L. Earl. 1993. Surface spectroscopy of environmental particles by Fourier-transform infrared and nuclear magnetic resonance spectroscopy. *In* J. Buffle and H.P. van Leeuwen (eds.), *Environmental Particles*, Vol. II, Chap. 1. Lewis Publishers, Chelsea, MI.
21. Sposito, G. 1994. Adsorption as a problem in coordination chemistry: The concept of the surface complex. *In* C.P. Huang, C.R. O'Melia and J.J. Morgan (eds.), *Advances in Aquatic Chemistry*, Chap. 2. American Chemical Society, Washington, D.C.
22. Ritchie, G.S.P., and G. Sposito. 1995. Speciation in soils. *In* A.M. Ure and C.M. Davidson (eds.), *Chemical Speciation in the Environment*, Chap. 8. Blackie Academic, London.
23. Sposito, G. 1995. Recent advances associated with soil water in the unsaturated zone. *U.S. National Report to International Union of Geodesy and Geophysics, 1991-1994. Rev. Geophys. Suppl.*, July 1995, pp. 1059-1065. American Geophysical Union, Washington, D.C.
24. Hemingway, B., and G. Sposito. 1989, 1996. Inorganic aluminum bearing solid phases. *In* G. Sposito (ed.), *The Environmental Chemistry of Aluminum*, Chap. 3. Lewis Publishers, Boca Raton, FL.
25. Heil, D., and G. Sposito. 1997. Chemical attributes of soil quality. *In* E.G. Gregorich and M.R. Carter (eds.), *Soil Quality for Crop Production*, Chap. 3. Elsevier Science Publishers, Amsterdam, The Netherlands.
26. Sposito, G. 1998. Scale invariance and the Richards equation. *In* G. Sposito (ed.), *Scale Dependence and Scale Invariance in Hydrology*, Chap. 6. Cambridge University Press, New York.
27. Chang, F.-R. C., N.T. Skipper, K. Refson, J.A. Greathouse, and G. Sposito. 1998. Interlayer molecular structure and dynamics in Li-, Na-, and K-montmorillonite-Water systems. *In* D.L. Sparks and T. Grundl (eds.), *Kinetics and Mechanisms of Reactions at the Mineral/Water Interface*, Chap. 6. American Chemical Society, Washington, D.C.
28. Sposito, G. 1999. The statistical physics of subsurface solute transport. *In* M. B. Parlange and J.W. Hopmans (eds.), *Vadose Zone Hydrology: Cutting Across Disciplines*, Chap. 3. Oxford University Press, New York.
29. Sposito, G., and D. Grasso. 1999. Electrical double layer structure, forces, and fields at the clay-water interface. *In* J.-P. Hsu (ed.), *Interfacial Forces and Fields: Theory and Applications*, Chap. 5. Marcel Dekker, New York.
30. Sposito, G. 1999. Ion exchange phenomena. *In* M.E. Sumner (ed.), *Handbook of Soil Science*, Section B, Chap. 7. CRC Press, Boca Raton, FL.
31. Sposito, G. 2001. The critical zone, contribution to Chapter 2, Science Opportunities. *In* Committee on Basic Research Opportunities in the Earth Sciences (several coauthors), *Basic Research Opportunities in Earth Science*. U.S. National Academy of Sciences, Washington, DC

(<http://books.nap.edu>).

32. Sposito, G. 2001. Methods of quantum field theory in the physics of subsurface solute transport. *In* B. Berkowitz (ed.), *Dispersion in Heterogeneous Geological Formations*, pp. 181-198. Kluwer Academic, Norwell, MA. [Reprinting of technical journal article 261.]
33. Greathouse, J.A., and G. Sposito. 2002. Electrical double-layer at particles. *In* A. Hubbard (ed.), *Encyclopedia of Surface and Colloid Science*, pp. 1642-1657. Marcel Dekker, New York. 2nd Ed. 2006. pp. 1955-1970. Taylor & Francis, New York.
34. Vrdoljak, G., and G. Sposito. 2002. Soil aggregate hierarchy in a Brazilian Oxisol. *In* A. Violante, P.M. Huang, J.-M. Bollag, and L. Gianfreda (eds.), *Soil Mineral-Organic Matter-Microorganism Interactions and Ecosystem Health*, pp. 197-217. Elsevier, New York.
35. Ritchie, G.S.P., and G. Sposito. 2002. Speciation in soils. *In* A.M. Ure and C.M. Davidson (eds.), *Chemical Speciation in the Environment*, 2nd Ed., Chap. 9. Blackwell Science, London.
36. Coccozza, C., C.C.G. Tsao, S.-F. Cheah, S.M. Kraemer, K.N. Raymond, T.M. Miano, and G. Sposito. 2002. Temperature dependence of goethite dissolution promoted by trihydroxamate siderophores. *Virtual J. Geobiol. (Jan.-June Basic Archive)* [Reprinting of technical journal article 268.]
36. Cheah, S.-F., S. M. Kraemer, J. Cervini-Silva, and G. Sposito. 2003. Steady-state dissolution kinetics of goethite in the presence of desferrioxamine B and oxalate ligands: Implications for microbial acquisition of iron. *Virtual J. Geobiol. Vol. 2 (5), Part 1B.* [Reprinting of technical journal article 276.]
38. Lo, W.-C., G. Sposito, and E. Majer. 2003. Immiscible two-phase fluid flows in deformable porous media. *In* C.T. Miller, M. B. Parlange, and S. M. Hassanizadeh (eds.), *25 Years of Advances in Water Resources*, pp. 245-257. Elsevier, Amsterdam. [Reprinting of technical journal article 271.]
39. Park, S.-H. and G. Sposito. 2004. Molecular modeling of clay structure and surface chemistry. *In* S. A. Auerbach, K. A. Carrado, and P. K. Dutta (eds.), *Handbook of Layered Materials Science & Technology*, Chap. 2. Marcel Dekker, New York.
40. Sposito, G. 2004. Scaling of Soil Physical Properties and Processes. *In* D. Hillel (ed.), *Encyclopedia of Soils in the Environment*, pp. 472-476. Elsevier, San Diego.
41. Sposito, G. 2007. Geochemistry in Soil Science. *In* W. Chesworth (ed.), *Encyclopedia of Soil Science*, pp. 283-289. Springer, New York.
42. Sposito, G. 2011. Electron shuttling by natural organic matter: Twenty years after. *In* P. Tratnyek, T. Grundl, and S. Haderlein (eds.), *Aquatic Redox Chemistry*, Chap. 5. ACS Symposium Series, American Chemical Society, Washington, DC.
43. Bourg, I. C. and G. Sposito. 2012. Ion Exchange Phenomena. *In* P. M. Hunag, Y. Li, and M.E.

- Sumner (eds.), *Handbook of Soil Sciences*, 2nd Ed., Chap. 16. CRC Press, Boca Raton, FL.
44. Sposito, G. 2014. Sustaining “the Genius of Soils.” In G. Churchman and E. Landa (eds.), *The Soil Underfoot: Infinite possibilities for a finite resource*, pp. 395-408. CRC Press, Boca Raton, FL.
 45. Kwon, K. D. and G. Sposito. 2015. Mechanistic understanding of metal sorption by phylломanganates through density functional theory. In Feng X., W. Li, M. Zhu and D. Sparks (eds.), *Advances in the Environmental Biogeochemistry of Manganese Oxides*, Chap. 3. American Chemical Society, New York.
 46. Sposito, G. 2016. Physical Properties and Processes: Scaling. In *Reference Module in Earth Systems and Environmental Sciences*. Elsevier, New York.
 47. Sposito, G. 2016. Gouy-Chapman Theory. In W. M. White (ed.), *Encyclopedia of Geochemistry*. DOI 10.1007/978-3-319-39193-9_50-1. Springer International Publishing, Cham, Switzerland.
 48. Sposito, G. 2017. Green Water. In H. Shugart (ed.), *Oxford Research Encyclopedia of Environmental Science*. DOI:10.1093/acrefore/9780199389414.013.368
 49. Mitchell, J. P., A. Shrestha, H. Ferris, F. Larney, and G. Sposito. 2018. Managing irrigation for soil health in arid and semi-arid regions. In D. Reicosky (ed.), *Managing Soil Health for Sustainable Agriculture*, Vol. 2, Chap. 24. Burleigh Dodds Science Publishing, Cambridge, UK.
 50. Sposito, G. 2018. Green water and food security. In B. Bromwich, T. Allan, T. Colman, and M. Keulertz (ed.), *Oxford Handbook of Food, Water and Society*. Oxford University Press, Oxford, U. K.

CONFERENCE PAPERS PUBLISHED

Invited papers are denoted by an asterisk.

1. Sposito, G., and J. V. Giráldez. 1976. On the theory of infiltration in swelling soils. *Proc. Symp. Water in Heavy Soils* 1:107, Bratislava, Czechoslovakia. (NR)
2. Giráldez, J. V., and G. Sposito. 1975. The drainage of saturated swelling soils. *Proc. Symp. Water in Heavy Soils* 1:135, Bratislava, Czechoslovakia. (NR)
3. Mattigod, S. V., and G. Sposito. 1979. Chemical modeling of trace metal equilibria in contaminated soil solutions using the computer program GEOCHEM. In *Chemical Modeling in Aqueous Systems*. ACS Symp. Series No. 93, pp. 837-856. Am. Chem. Soc., Washington, D.C. [Reprinted 1986. In A. Elprince (ed.), *The Chemistry of Soil Solutions*, pp. 326-345. Van Nostrand Reinhold, New York. Chosen as a "Benchmark Paper" by the editor.]
- * 4. Sposito, G. 1981. Cation exchange in soils: An historical and theoretical perspective. In R. H. Dowdy et al. (ed.), *Chemistry in the Soil Environment*. Soil Sci. Soc. Am., Madison, WI.

5. Mattigod, S. V., G. Sposito, and A. L. Page. 1981. Factors affecting the solubilities of trace metals in soils. In R. H. Dowdy et al. (ed.), *Chemistry in the Soil Environment*. Soil Sci. Soc. Am., Madison, Wisconsin.
6. Sposito, G., and F. T. Bingham. 1981. Computer modeling of trace metal speciation in soil solutions: Correlation with trace metal uptake by higher plants. *J. Plant Nutrition* 3:35.
- * 7. Sposito, G. 1985. Chemical models of weathering in soils. In J. I. Drever (ed.), *The Chemistry of Weathering*. D. Reidel, Dordrecht, The Netherlands.
8. Senesi, N., and G. Sposito. 1985. A comparative electron spin resonance (ESR) study of copper(II) complexes with soil and sewage sludge fulvic acids. *Org. Geochem.* 8:121.
9. Senesi, N., G. Sposito, and J. P. Martin. 1985. Complexation of some transition metal ions in soil humic acids: An ESR study. T. D. Lekkas (ed.), *Proc. Int. Conf. on Heavy Metals in the Environment*, Vol. 2, pp. 478-480. Athens, Greece, September 10-13, 1985. CEP Consultants, Edinburgh, U.K.
10. Senesi, N., G. Sposito, and J. P. Martin. 1985. Copper(II) and iron(II) binding by soil humic acids: An ESR study. *Proc. Int. Conf. on Man's Role in Changing the Global Environment*, pp. 167-169. Venice, Italy, October 21-26, 1985.
11. Senesi, N., and G. Sposito. 1987. Characterization and stability of transition metal complexes of chestnut (*Castanea sativa* L.) leaf litter. *Proc. 18th IUFRO Congress*, Div. 1, Vol. II, p. 792. Ljubljana, Yugoslavia, September 7-21, 1986.
- * 12. Sposito, G., and P. W. Schindler. 1987. Reactions at the soil colloid-soil solution interface. *Transactions, 13th ISSS Congress*, Vol. VI, pp. 683-699. Hamburg, Germany, August 13-20, 1986.
13. Jury, W. A., and G. Sposito. 1987. Representation of solute transport with a transfer function. *Transactions, 13th ISSS Congress*, Vol. VI, pp. 533-540. Hamburg, Germany, August 13-20, 1986.
- * 14. Johnston, C. T., and G. Sposito. 1987. Disorder and early sorrow: Progress in the chemical speciation of soil surfaces. In L. L. Boersma et al. (eds.), *Future Developments in Soil Science Research*, pp. 89-100. Soil Sci. Soc. Am., Madison, Wisconsin.
15. Senesi, N., and G. Sposito. 1987. Manganese(II) complexation by humic acids from soils and soil fungi. S. E. Lindberg and T. C. Hutchinson (eds.), *Proc. Int. Conf. on Heavy Metals in the Environment*, Vol. 2, pp. 330-333. New Orleans, Louisiana, September 15-18, 1987. CEP Consultants, Edinburgh, U.K.

16. Senesi, N., G. Sposito, and J. P. Martin. 1987. Intrinsic copper, iron and vanadyl complexes in humic acid-type polymers (melanins) from soil fungi: An ESR study. G. Giovannozzi-Sermanni and P. Nannipieri (ed.), *Proc. 7th Int. Symp. on Current Perspectives in Environmental Biogeochemistry*, pp. 295-309. Rome, Italy, September 8-13 1985. Martinus Nijhoff, Amsterdam, The Netherlands.
- * 17. Sposito, G., and W. A. Jury. 1988. The lifetime probability density function for solute movement in the subsurface zone. *J. Hydrol.* 102:503.
18. Senesi, N., G. Sposito, and T.M. Miano. 1989. Effects of amendments of urban wastewater sludges on the structural, chemical, and physicochemical properties of soil humic acids. Conference proceedings, *Soil Fertility and Plant Nutrition*, pp. 405-409. Sorrento, Italy, May 7-8, 1987.
- * 19. Sposito, G. 1990. Lie group invariance of the Richards equation. In J. H. Cushman (ed.), *Dynamics of Fluids in Hierarchical Porous Media*, pp. 327-347. Academic Press, London.
- * 20. Sposito, G., and W. A. Jury. 1990. Miller similitude and generalized scaling analysis. In D. Hillel (ed.), *Scaling in Soil Physics: Principles and Applications*, Chap. 2. Soil Science Society of America, Spec. Publ. 25, Madison, WI.
21. Senesi, N., T.M. Miano, and G. Sposito. 1990. Molecular and metal chemistry of Leonardite humic acid in comparison to typical soil humic acids. *Int. Conf. on Peat Production and Use*, Vol. 1, pp. 412-421. Jyväskylä, Finland, June 11-15, 1990.
- * 22. Schindler, P. W., and G. Sposito. 1991. Surface complexation at (hydr)oxide surfaces. In G. H. Bolt, M. F. De Boodt, M. B. McBride, M. H. B. Hayes, (eds.). *Interactions at the Soil Colloid-Soil Solution Interface*. Chap. 4. NATO ASI Series, Vol. 190. Kluwer Academic Publishers, Dordrecht, The Netherlands.
- * 23. Rieu, M., and G. Sposito. 1991. The water characteristic curve of fragmented porous media and the fractal nature of soil structure. *Comptes-Rendus Acad. Sci. Paris* 312:1483.
- * 24. Sposito, G. 1992. The diffuse-ion swarm near smectite particles suspended in 1:1 electrolyte solutions: Modified Gouy-Chapman theory and quasicrystal formation. In N. Güven and R.M. Pollastro (eds.), *The Clay-Water Interface and its Rheological Implications*, pp. 127-155. The Clay Minerals Society, Boulder, CO.
25. Johnsson, P. A., A. Blum, M. F. Hochella, G. A. Parks, and G. Sposito. 1992. Direct observation of muscovite basal-plane dissolution and secondary phase formation: An XPS, LEED, and SFM study. *Proc. 7th Int. Symp. Water-Rock Interaction*, pp. 159-162. Park City, UT, July 13-18, 1992.
26. Luster, J., T. Lloyd, and G. Sposito. 1994. Aluminum (III) complexation by an aqueous leaf litter extract: Quantitative characterization by molecular fluorescence spectroscopy. In N. Senesi and T.M. Miano (eds.), *Humic Substances in the Global Environment and Implications on Human Health*, pp. 1019-1024. Elsevier Science, Amsterdam.

27. Provenzano, M.R., and G. Sposito. 1994. Application of two-dimensional fluorescence spectroscopy to the study of pine litter in different ecosystems. In N. Senesi and T.M. Miano (eds.), *Humic Substances in the Global Environment and Implications on Human Health*, pp. 1019-1024. Elsevier Science, Amsterdam. pp. 335-342.
28. Martin Neto, L., E. M. Vieira, and G. Sposito. 1994. Spectroscopic study of atrazine sorption and degradation by humic substances. *Transactions, 15th ISSS Congress*, Vol. IIIB, pp. 242-243. Acapulco, México, July 10-16, 1994.
29. Sposito, G., and J. Coves. 1995. SOILCHEM on the Macintosh. In R.H. Loeppert, A.P. Schwab, and S. Goldberg (eds.), *Chemical Equilibrium and Reaction Models*, pp. 271-287. Soil Science Society of America, Madison, WI.
30. Fontes, M.P.F., and G. Sposito. 1995. Measurement of the accessible structural charge density in Brazilian Latosols with differing mineralogy. *Proceedings, 25th Brazilian Soil Science Congress*, Vol. I, pp. 292-294. Viçosa, Brazil.
31. Schroth, B. K., and G. Sposito. 1997. Surface charge properties of kaolinite. In J.A. Voight, T.E. Wood, B.C. Bunker, W.H. Casey, L.J. Crossey (eds.), *Aqueous Chemistry and Geochemistry of Oxides, Oxyhydroxides, and Related Materials*, pp. 87-92. Materials Research Society, Pittsburgh, PA.
32. Malengreau, N., and G. Sposito. 1997. Chemical, HR-XRD and spectroscopic approaches to short-time dissolution behavior of kaolinitic soils. In J.A. Voight, T.E. Wood, B.C. Bunker, W.H. Casey, L.J. Crossey (eds.), *Aqueous Chemistry and Geochemistry of Oxides, Oxyhydroxides, and Related Materials*, pp. 289-294. Materials Research Society, Pittsburgh, PA.
- * 33. Sposito, G., and N. Malengreau. 1998. Colloidal phenomena in the short-time dissolution mechanisms of kaolinitic tropical soils. *Transactions, 16th ISSS Congress*. Montpellier, France, August 20-26, 1998. (CD-ROM)
- * 34. Sposito, G. 1998. The aims of soil science, challenges to be met by soil science, the services soil science can render. *Transactions, 16th ISSS Congress*. Montpellier, France, August 20-26, 1998. (CD-ROM)
35. Sposito, G. 1999. On dynamic permeability. *Proceedings Dynamics of Fluids in Fractured Rocks: Concepts and Recent Advances*, pp. 9-12. Lawrence Berkeley National Laboratory, February 10-12, 1999. (LBNL – 42718)
- * 36. Sposito, G., N.T. Skipper, R. Sutton, S.-H. Park, A.K. Soper, and J.A. Greathouse. 1999. Surface geochemistry of the clay minerals. *Colloquium on Geology, Mineralogy, and Human Welfare*, pp. 3358-3364. National Academy of Sciences, November 8-9, 1998, Irvine, CA. [Reprinting of technical journal article 251.]
37. Wang, D., W.E. Dubbin, J.Y. Shin, M. Zavarin, M.A. Cheney, T.G. Spiro, and G. Sposito.

1999. Spectroscopic probes of degradation reactions promoted by metal oxide surfaces. *Goldschmidt Conference*, Cambridge, MA, August 22-27, 1999. (CD-ROM)
38. Perrier, E., M. Rieu, G. Sposito, and G. de Marsily. 1999. Pore-scale soil structure models and associated hydraulic properties. In M. Th. Van Genuchten and F.J. Leij (eds.), *Characterization and Measurement of the Hydraulic Properties of Unsaturated Porous Media*, pp. 93-100. Department of Environmental Sciences, University of California, Riverside, CA.
39. Roberts, P. M., E. L. Majer, W.-C. Lo, G. Sposito, and T. L. Daley. 2002. An integrated approach to seismic stimulation of oil reservoirs. *Proceedings of the 16th International Symposium on Nonlinear Acoustics*, Moscow, Russia, August 19-23, 2002.
40. Cervini-Silva, J., and G. Sposito. 2002. Adsorption of desferrioxamine-B and oxalate on Al-goethite: implications for microbial dissolution processes. *Goldschmidt Conference*, Davos, Switzerland, August 18-23, 2002. (CD-ROM)
41. Majer, E., S. Pride, W.-C. Lo, T. Daley, G. Sposito, S. Nakagawa, and P. Roberts. 2006. Modeling and field results from seismic stimulation. In A. A. Atchley, V. W. Sparrow, and R. M. Keolian (eds.), CP838, *Innovations in Nonlinear Acoustics*, pp. 167-173. American Institute of Physics, College Park, MD.

BOOK REVIEWS

1. Sposito, G. 1967. Review of *Mathematics for Physicists* by P. Dennery and A. Krzywicki. *Physics Today* 20, No. 7.
2. Sposito, G. 1967. Review of *Distributions and the Boundary Values of Analytic Functions* by E. J. Beltrami and M. R. Wohlers. *Physics Today* 20, No. 10.
3. Sposito, G. 1967. *Review of Fundamental Physics* by J. Orear. *Physics Today* 20, No. 11.
4. Sposito, G. 1968. Review of *Fundamental Quantum Mechanics* by S. Borowitz. *Physics Today* 21, No. 2.
5. Sposito, G. 1968. Review of *Fundamentals of Mathematical Physics* by E. Kraut. *Physics Today* 21, No. 4.
6. Sposito, G. 1968. Review of *Elementary Quantum Mechanics* by D. S. Saxon. *Physics Today* 21, No. 11.
7. Sposito, G. 1969. Review of *Progress in Low Temperature Physics*, Vol. V by C. J. Gorter. *Physics Today* 22, No. 1.

8. Sposito, G. 1969. Review of *Equilibrium Statistical Mechanics* by E. A. Jackson, *Physics Today* 22, No. 3.
9. Sposito, G. 1969. Review of *Wave Mechanics* by G. Ludwig. *Physics Today* 22, No. 4.
10. Sposito, G. 1969. Review of *The Mathematical Principles of Quantum Mechanics* by D. F. Lawden. *Physics Today* 22, No. 5.
11. Sposito, G. 1969. Review of *Graph Theory and Theoretical Physics* by F. Harary. *Physics Today* 22, No. 7.
12. Sposito, G. 1969. Review of *Mathematics for Physics* by E. Butkov. *Physics Today* 22, No. 9.
13. Sposito, G. 1969. Review of *Lagrangian Dynamics* by C. W. Kilmister. *Physics Today* 22, No. 12.
14. Sposito, G. 1970. Review of *Thermal Physics* by E. A. Desloge. *Physics Today* 3, No. 2.
15. Sposito, G. 1970. Review of *Linear Operators for Quantum Mechanics* by T. F. Jordan. *Physics Today* 23, No. 4.
16. Sposito, G. 1971. Review of *Quantum Mechanics with Applications* by G. B. Beard and D. B. Beard. *Physics Today* 24, No. 1.
17. Sposito, G. 1986. Review of *Chemistry of Irrigated Soils* by R. Levy. *Irrigation Sci.* 7:143.
18. Sposito, G. 1987. Review of *Adsorption Phenomena* by R. D. Harter. *Soil Sci.* 143:76.
19. Sposito, G. 1990. Review of *Flow and Transport in Porous Formations* by G. Dagan. *Irrigation Sci.* 11:251.
20. Sposito, G. 1990. Review of *Weathering* (2 Vols.) by K. S. Balasubramaniam *et al.* *Geochim. Cosmochim. Acta* 54:1862.
21. Sposito, G. 1992. Review of *Aquatic Chemical Kinetics* by W. Stumm. *Chem. Geol.* 94:363.
22. Sposito, G. 1992. Review of *Field-Scale Water and Solute Flux in Soils* by K. Roth *et al.* *Quarterly Rev. Biol.* 67:395.
23. Sposito, G. 1993. Review of *Chemistry of the Solid-Water Interface* by W. Stumm. *Marine Chem.* 42:259.
24. Sposito, G. 1993. Review of *Principles of Contaminant Transport in Soils* by R.N. Yong, A.M.O. Mohamed, and B.P. Warkentin. *J. Hydrology* 152:217.

25. Sposito, G. 2001. Review of *Upscaling and Downscaling Methods for Environmental Research* by M.F.P. Bierkens, P.A. Finke, and P. de Willigen. *Geoderma* 103:354.
26. Sposito, G. 2001. Review of *Environmental Mineralogy* by D.J. Vaughan and R.A. Wogelius. *Am. Mineral.* 86:954.
27. Sposito, G. 2001. Casting the runes. Review of *Fractals in Soil Science* by Ya. A. Pachepsky, J.W. Crawford, and W.J. Rawls. *Hydrol. Processes* 15:3077.
28. Sposito, G. 2002. Review of *Environmental Mineralogy* by J.D. Cotter-Howells, L.S. Campbell, E. Valsami-Jones, and M. Batchelder. *Am. Mineral.* 87:592.
29. Sposito, G. 2002. Where it's at. Review of *Physical and Chemical Processes of Water and Solute Transport/Retention in Soil* by H.M. Selim and D.L. Sparks. *Hydrol. Processes* 16:1337.
30. Sposito, G. 2019. Review of *Properties and Management of Soils in the Tropics*. *Vadose Zone J.* 18:190002br. doi:10.2136/vzj2019.09.0002br

TECHNICAL REPORTS

1. Anderson, D. M., and G. Sposito. 1960. Mechanisms of soil aggregation and dispersion. Prepared for Western Regional Technical Committee W-66, October. (NR)
2. Anderson, D. M., and G. Sposito. 1961. Mechanisms of soil aggregation and dispersion. Prepared for Western Regional Technical Committee W-66, November. 13 p. (NR)
3. Anderson, D. M., A. Linville, L. M. Parks, R. C. Jones, and G. Sposito. 1961. A study of the mechanics of unsaturated flow in soils. Prepared for Western Regional Technical Committee W-68, October. 44 p. (NR)
4. Anderson, D. M., A. Linville, and G. Sposito. 1961. Temperature fluctuations at a wetting front and an application of the theory of rate processes to water flow in soils. Prepared for Meteorology Dept. USAEPG, Ft. Huachuca, Arizona, Contract No. DA-36-039-SC-80581, September. 50 p.
5. Anderson, D. M., G. Sposito, and P. Ricci. 1962. Mechanisms of soil aggregation and dispersion. Prepared for Western Regional Technical Committee W-66, October. 28 p. (NR)
6. Anderson, D. M., G. Sposito, and R. C. Jones. 1962. A study of the mechanics of unsaturated flow in soils. Prepared for Western Regional Technical Committee W-68, October. 54 p. (NR)

7. Anderson, D. M., G. Sposito, R. Sommerfield, and R. Street. 1962. Temperature fluctuations at a wetting front and an application of the theory of rate processes to water flow in soils. Prepared for Meteorology Dept. USAEPG, Ft. Huachuca, Arizona, Contract No. DA-36-039-SC-80581, September. 49 p. (NR)
8. Anderson, D. M., R. C. Jones, and G. Sposito. 1963. Mechanisms of soil aggregation and dispersion. Prepared for Western Regional Technical Committee W-66, October. 18 p. (NR)
9. Anderson, D. M., G. Sposito, and R. C. Jones. 1963. A study of mechanics of unsaturated flow in soils. Prepared for Western Regional Technical Committee W-68, October. 34 p. (NR)
10. Sposito, G. 1975. Predictions of seepage through clay soil linings in real estate lakes. Completion Rept., OWRT Project No. A-055-ARIZ, April. 36 p. (NR)
11. Gupta, V. K., R. N. Bhattacharya, and G. Sposito. 1976. A new stochastic approach to the foundations of deterministic transport equations for porous media. Ann. Rept., OWRT Project No. B-046-ARIZ, August. 30 p. (NR)
12. Sposito, G., and A. L. Page. 1977. Trace metal speciation in saline waters affected by geothermal brine. UCRL-13790. Ann. Rept., Lawrence Livermore Laboratory Contract (ERDA), November. 20 p. (NR)
13. Gupta, V. K., G. Sposito, and R. N. Bhattacharya. 1978. Foundational theories of solute transport in porous media: A critical review. Completion Rept., OWRT Project No. B046-ARIZ, January. 40 p. (NR)
14. Sposito, G. 1979. Fundamental studies on subsurface transport theory. Final Tech. Rept., NSF Grant ENG-76-09210, June. 22 p. (NR)
15. Sposito, G., A. L. Page and S. V. Mattigod. 1979. Trace metal speciation in saline waters affected by geothermal brines. UCRL-15072. Final Tech. Rept., Lawrence Livermore Laboratory Contract (D.O.E.), July. 65 p. (NR)
16. Sposito, G., and C. A Inouye. 1979. Computer calculation of the effect of acid precipitation on soil leachate quality. Addendum Rept., U.S. EPA, Corvallis, Oregon, December. 19 p. (NR)
17. Sposito, G., and S. V. Mattigod. 1980. GEOCHEM: A computer program for the calculation of chemical equilibria in soil solutions and other natural water systems. Kearney Found. Soil Sci. 110 p. (NR)
18. Sposito, G., A. L. Page, and M. E. Frink. 1980. Computer calculation of the effect of acid precipitation on soil leachate quality. Final Tech. Rept., U.S. EPA, Corvallis, Oregon, January. 39 p. EPA-600/3-80-015. (NR)
19. Sposito, G., J. P. LeClaire, C. S. LeVesque, and N. Senesi. 1984. Methodologies to predict the mobility and availability of hazardous metals in sludge-amended soils. Final Tech. Rept., OWRT Project No. B-212-CAL. Water Resources Center, Univ. of California, Contribution No. 189. 94 p.

20. Lund, L. J., G. Sposito, and A. L. Page. 1985. Determination and prediction of chemical forms of trace metals in sewage sludge and sludge-amended soils. Proj. Rept., U.S. EPA, Water Engineering Research Laboratory, Cincinnati, Ohio, April. 229 p. EPA-600/S2-85-053.
21. Coves, J., and G. Sposito. 1986. MICROQL-UCR: A surface chemical adaptation of the speciation program MICROQL. Dept. of Soil and Environ. Sci., Univ. of California, Riverside. 43 p. (NR)
22. Sposito, G. 1986. Stochastic modeling of contaminant transport in natural aquifers. Final Rept., Toxic Substances Research and Teaching Program, Univ. of California, Davis. 29 p. (NR)
23. Sposito, G., R. H. Neal, K. M. Holtzclaw, and D. Bedford. 1986. Sorption and desorption of selenite and selenate by representative soils of the western San Joaquin Valley. U.C. Salinity/Drainage Task Force 1985-86 Tech. Progress Rept. Univ. of California, Davis. (NR)
24. Sposito, G., C. Thellier, K. Holtzclaw, and J. D. Rhoades. 1987. Chemical effects of saline drainage waters on irrigated San Joaquin Valley soils. Final Tech. Rept., Project W-632. Water Resources Center, Univ. of California, Contribution No. 196. 85 p.
25. Sposito, G., R. H. Neal, K. M. Holtzclaw, J. de Wit, and J. Faris. 1987. Selenate and selenite adsorption and transport in San Joaquin Valley soils. U.C. Salinity/Drainage Task Force 1986-87 Tech. Progress Rept., pp. 67-72. (NR)
26. Sposito, G., C. Thellier, P. Fletcher, and J. Faris. 1987. Colloidal properties of illitic soils in relation to surface crust formation. Kearney Found. Soil Sci. 1986-87 Ann. Rept., pp. 36-41. Univ. of California, Davis. (NR)
27. Sposito, G., and S J. Calderone. 1988. Boron uptake and accumulation by higher plants: A literature review. Final Tech. Rept., Project 2377-6. Electric Power Res. Inst., Palo Alto, California. 50 p.
28. Barry, D. A., G. Sposito, and J. Coves. 1988. TFMFIT: A Program to Fit a Generalized Convection-Dispersion Model to Experimental Data. Tech. Rept., NSF Project ECE-8513726 and Water Resources Center Project W-703. Univ. of California, Riverside. 92 p. (NR)
29. Sposito, G., and J. Coves. 1988. SOILCHEM: A Computer Program for the Calculation of Chemical Speciation in Soils. Kearney Found. Soil Sci., Univ. of California, Riverside and Berkeley. 92 p. (NR)
30. Sposito, G., C. Thellier, J. Coves, K. M. Holtzclaw, and J. Faris. 1988. Colloidal properties of illitic soils in relation to surface crust formation. Kearney Found. Soil Sci. 1987-88 Ann. Rept., pp. 16-23. Univ. of California, Davis. (NR)
31. Sposito, G., R. H. Neal, J. Faris, B.-J. Groenenberg, A. Mackzum, and S. J. Traina. 1988. Selenate and selenite adsorption and transport in San Joaquin Valley soils. U.C. Salinity/Drainage Task Force 1987-88 Tech. Progress Rept., pp. 54-61. (NR)

32. Sposito, G., C. Thellier, and D. Heil. 1989. Colloidal properties of illitic soils in relation to surface crust formation. Kearney Found. Soil Sci. 1988-89 Ann. Rept., pp. 15-20. (NR)
33. Sposito, G., A. Mackzum, A. Yang, and R. H. Neal. 1989. The effect of oxidation-reduction conditions on transformations of selenium in soils of the western San Joaquin Valley. U.C. Salinity/Drainage Task Force 1988-89 Tech. Progress Rept., pp. 55-58. (NR)
34. Sposito, G. 1990. Stochastic modeling of organic contaminant transport in ground water. Tech. Completion Rept. Water Resources Center Project W-703. 20 p. (NR)
35. Sposito, G., A. Yang, and R. H. Neal. 1990. The effect of oxidation-reduction conditions on transformations of selenium in soils of the western San Joaquin Valley. U.C. Salinity/Drainage Task Force 1989-90 Tech. Progress Rept., pp. 56-61. (NR)
36. Sposito, G., A. Yang, and D. Heil. 1990. Colloidal properties of soil illite influencing surface crust formation. Kearney Found. Soil Sci. 1989-90 Ann. Rept., pp. 10-15. (NR)
37. Sposito, G., and D. Heil. 1991. Colloidal properties of soil illite influencing surface crust formation. Kearney Found. Soil Sci. 1990-91 Ann. Rept., pp. 11-18. (NR)
38. Sposito, G. 1992. Chemical factors affecting colloid-mediated transport of organic pollutants in soils. Kearney Found. Soil Sci. 1991-92 Ann. Rept., pp. 55-59. (NR)
39. Chorover, J., and G. Sposito. 1993. Measurement of soil surface charge components. Technical Rept. NSF Grant No. EAR-9221258. 48 p. (NR)
40. Sposito, G. 1994. Chemical factors affecting colloid-mediated transport of organic pollutants in soils. Kearney Found. Soil Sci. 1992-93 Ann. Rept., pp. 111-118. (NR)
41. Sposito, G. 1994. Spectroscopic studies of herbicide-humic substance complexes in soils. Kearney Found. Soil Sci. 1992-93 Ann. Rept., pp. 143-170. (NR)
42. Sposito, G. 1995. Chemical factors affecting colloid-mediated transport of organic pollutants in soils. Kearney Found. Soil Sci. 1993-94 Ann. Rept., pp. 81-92. (NR)
43. Sposito, G. 1995. Chemical factors affecting colloid-mediated transport of organic pollutants in soils. Kearney Found. Soil Sci. 1994-95 Ann. Rept., pp. 87-100. (NR)
44. Sposito, G., and M.A. Cheney. 1996. Calorespirometry: A new approach to quantify pollutant reactions in soils and sediments. U.S.D.O.E. Summaries of FY 1996 Geosciences Research (DOE/NBM-1097), pp. 13-14. (NR)
45. Sposito, G. 1996. Spectroscopic studies of herbicide-humic substance complexes in soils. Kearney Found. Soil Sci. 1995-96 Ann. Rept., pp. 87-102. (NR)
46. Sposito, G. 1996. Chemical factors affecting colloid-mediated transport of organic pollutants in soils. Kearney Found. Soil Sci. 1995-96 Ann. Rept., pp. 75-85. (NR)

47. Sposito, G., and M.A. Cheney. 1997. Calorespirometry: A new approach to quantify pollutant reactions in soils and sediments. U.S.D.O.E. Summaries of FY 1997 Geosciences Research (DOE/NBM-1098–Rev. 1), pp. 14-15, 184-185. (NR)
48. Sposito, G., L. Hersman, and P. Maurice. 1997. Microbial dissolution of iron oxides. U.S.D.O.E. Summaries of FY 1997 Geosciences Research (DOE/NBM–1098-Rev. 1), pp. 85-86, 140–141. (NR)
49. Benson, S.M. et al. 1997. Preliminary identification of basic science needs and opportunities for capturing and sequestering carbon by enhancing the natural carbon cycle. Carbon Management: Assessment of Fundamental Research Needs. U.S.D.O.E. report DOE/ER 0724, Appendix C. (NR)
50. Hersman, L., G. Sposito, and G. Vrdoljak. 1998. Microbially-mediated dissolution of iron oxides. UC DRD Activities for Fiscal Year 1997, Los Alamos National Laboratory, pp. 84-85. (NR)
51. Sposito, G., J.A. Greathouse, S.-H. Park, and R. Sutton. 1999. Molecular-scale simulation of clay mineral surface geochemistry. Annual Report 1997-1998, Earth Sciences Division, Lawrence Berkeley National Laboratory (LBNL-42452), pp. 19-20. (NR)
52. Sposito, G., S.-H. Park, and R. Sutton. 1999. Molecular simulations of clay mineral surface geochemistry. Annual Report 1998, National Energy Research Scientific Computing Center (LBNL-42920), p. 61. (NR)
53. Hersman, L.E., G. Sposito, and G. Vrdoljak. 1999. Microbially mediated dissolution of iron oxides. UC DRD Activities for Fiscal Year 1998, Los Alamos National Laboratory, p. 82. (NR)
54. Sutton, R., G. Sposito, S.-H. Park, and J. Greathouse. 2000. Molecular modeling of clay mineral surface geochemistry: Hydrated cesium-smectites. Annual Report 1998-1999, Earth Sciences Division, Lawrence Berkeley National Laboratory (LBNL-43816), pp. 31-32. (NR)
55. (several co-authors). 2000. Research Opportunities in Low-Temperature and Environmental Geochemistry. National Science Foundation, Washington, DC. (www.geo.nsf.gov/ear/programs/gepage.html)
56. Hersman, L.E., G. Sposito, and G. Vrdoljak. 2000. Microbially mediated dissolution of iron oxides. UC DRD Activities for Fiscal Year 1999, Los Alamos National Laboratory, p. 46-54. (NR)
57. Park, S.-H., G. Sposito, R. Sutton, and J.A. Greathouse. 2001. Formation and stability of methane hydrates in clay interlayers. Annual Report 1999-2000, Earth Sciences Division, Lawrence Berkeley Laboratory (LBNL-47002), p. 37. (NR)
58. Hersman, L.E., G. Sposito, and C. Tsao. 2001. Subsurface actinide mobilization by microbial siderophores. UC DRD Activities for Fiscal Year 2000, Los Alamos National Laboratory, p. 100, 197. (NR)

59. Park, S.-H., G. Sposito, R. Sutton, and J. Greathouse. 2002. Density functional theory calculations on the structures of 2:1 clay minerals. Annual Report 2000-2001, Earth Sciences Division, Lawrence Berkeley Laboratory (LBNL-48899), p. 22. (NR)
60. Lo, W.-C., G. Sposito, and E.L. Majer. 2002. Wave propagation through a porous medium containing two immiscible fluids. Annual Report 2000-2001, Earth Sciences Division, Lawrence Berkeley Laboratory (LBNL-48899), p. 19. (NR).
61. Hersman, L. E., G. Sposito, K. N. Raymond, S. M. Kraemer, and C. G. Tsao. 2002. Subsurface actinide mobilization by microbial siderophores. UC DRD Activities for Fiscal Year 2001, Los Alamos National Laboratory, pp. 50-54. (NR)
62. Hersman, L. E., G. Sposito, K. N. Raymond, and S. M. Kraemer. 2003. Subsurface actinide mobilization by microbial siderophores. UC DRD Activities for Fiscal Year 2002, Los Alamos National Laboratory, pp. 17-19. (NR)
63. Park, S.-H., and G. Sposito. 2004. Structure of water adsorbed on a mica surface. Annual Report, 2002-2003, Earth Sciences Division, Lawrence Berkeley National Laboratory (LBNL-53859), p. 31. (NR)
64. Silver, W. L., G. Sposito, M. K. Firestone, and E. Schwartz. 2005. Is the biogeochemistry of iron a primary controller of phosphorus and nitrogen availability in tropical forest soils? Final Report to Andrew W. Mellon Foundation. 8 pp. (NR)
65. Sposito, G., S.-H. Park, and K. Refson. 2005. NERSC supercomputers are being used to predict the atomic structures of environmental nanoparticles that play important roles in global geochemical cycles. DOE Greenbook: Needs and Directions in High Performance Computing for the Office of Science, U.S. Department of Energy, Office of Science, June 2005 (PPPL-4090), pp. 30-31. (NR)
66. Bourg, I. C., and G. Sposito. 2008. Isotope fractionation by diffusion in liquid water. Annual Report, 2006-2007, Earth Sciences Division, Lawrence Berkeley National Laboratory (LBNL-771E), p. 39. (NR)
67. Bourg, I. C., L. N. Lammers, and G. Sposito. 2015. Molecular dynamics sorption modeling. FY 14 Annual Report, JAEA-LBNL Collaboration on "Repository Geoscience and PA Technology Development" Task C: Contribute to the Compilation of Knowledgebase of Repository Science and Technology. pp. 19-30. (NR)