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- Publications:

a. Books (Editor or Principal Contributor):

1. 1983. *Role of the Unsaturated Zone in Radioactive and Hazardous Waste Disposal*. J. W. Mercer, P.S.C. Rao, W. Marine (Editors), Ann Arbor Sci. Publ. Inc., 1983, 339 pages.
2. 1990. *Ground Water Modeling: Scientific and Regulatory Applications*, 1990, National Academy Press, Inc., Washington, D.C.
3. 1993. *Ground Water Vulnerability Assessment: Predicting Relative Contamination Potential Under Conditions of Uncertainty*, 1993, ¹National Academy Press, Washington, D.C.
4. 1995. *Soil and Ground Water Pollution from Agricultural Activities, UNESCO Series of Learning Materials* in Engineering Sciences, UNESCO, Paris.
5. 1997. *Innovations in Ground Water and Soil Cleanup: From Concept to Commercialization*, ¹National Academy Press, Washington, D.C., October 1997 [COMMITTEE CHAIR]

b. Monographs or Reports

1. 1987. Rao, P. S. C., and R. E. Green (Editors). *Toxic Organic Chemicals in Hawaii Water Resources*. Research Extension Series 086, Hawaii Inst. Tropical Agric. & Human Resour., Honolulu, HI, Nov. 1987, 67 pages.
2. 1988. Nofziger, D.L., P.S.C. Rao, and A.G. Hornsby. *CHEMRANK: Interactive Software for Ranking the Potential of Chemicals to Contaminate Groundwater*. Florida Cooperative Extension Service Circular 788, 1988, University of Florida, Gainesville, FL. 56 pages.
3. 1988. Rao, P.S.C., R.D. Rhue, C.T. Johnston, and R.A. Ogwada*. *Sorption of Selected Volatile Organic Constituents of Jet Fuels and Solvents on Natural Sorbents from Gas- and Liquid-Phases*. Report # ESL-TR-88-02, 1988, U.S. Air Force, Tyndall Air Force Base, FL, 196 pages.
4. 1991. Rao, P.S.C., L.S. Lee*, and A.L. Wood. *Solubility, Sorption, and Transport of Hydrophobic Organic Chemicals in Complex Mixtures*. EPA/600/M-91/009, 1991, R.S. Kerr Env. Res. Lab., U.S. EPA, Ada, OK, 14 pages.
5. 1992. Lee, L.S., P.S.C. Rao, and I. Okuda. *Estimating Release of Polyaromatic Hydrocarbons from Coal Tar at Manufactured Gas Plant Sites: Application of Raoult's Law*. EPRI-TR-101060, August 1992, Electric Power Res. Institute, Palo Alto, CA 70 pages.

6. 1998. Sillan, R.K., M.D. Annable, and P.S.C. Rao. *In situ Cosolvent Flushing for Enhanced Solubilization of a Complex LNAPL: Comprehensive Field Scale Evaluation*. USEPA-SERDP-Air Force Project Final Report.
7. 1998. Jawitz, J.W., M.D. Annable, and P.S.C. Rao. *Laboratory and Field Evaluation of Single-phase Microemulsions (SPME) for Enhanced in-situ Remediation of Contaminated Aquifers*. DoD-AATDF-EPA-Air Force Project Final Report.
8. Kavanaugh, M. C., and P.S.C. Rao. 2003. The DNAPL Remediation Challenge: Is There a Case for Source Depletion? EPA/600/R-03/013, December 2003. US EPA, Cincinnati, OH.

c. Selected Book Chapters (1986-2003):

1. 1986. Rao, P.S.C., K.S.V. Edvardsson, L.T. Ou, R.E. Jessup, P. Nkedi-Kizza, and A.G. Hornsby. "Spatial Variability of Pesticide Sorption and Degradation Parameters." In: *Evaluation of Pesticides in Ground Water* (edited by: W. Y. Garner, R. C. Honeycutt, and H. N. Nigg), ACS Symp. Series #315, Amer. Chem. Soc., Washington, D.C., 1986, pp. 100-115.
2. 1986. Donigian, Jr., A.S., and P.S.C. Rao. "Overview of Terrestrial Processes and Modelling." In: *Vadose Zone Modelling of Organic Pollutants* (edited by: S. C. Hern and S. M. Melancon), Lewis Publishers, Inc., Chelsea, MI, 1986, pp. 3-35.
3. 1986. Donigian, Jr., A.S., and P.S.C. Rao. "Example Model Testing Studies." In: *Vadose Zone Modelling of Organic Pollutants* (edited by: S. C. Hern and S. M. Melancon), Lewis Publishers, Inc., Chelsea, MI, 1986, pp. 103-131.
4. 1986. Rao, P.S.C., Nkedi-Kizza, P.*, and J.M. Davidson. "Abiotic Process Affecting the Transport of Organic Pollutants in Soils." In: *Land Treatment: A Hazardous Waste Management Alternative* (edited by: R. C. Loehr and J. F. Malina, Jr.), Water Resources Symp. #13, The Univ. of Texas, Austin, TX, 1986, pp. 63-72.
5. 1987. Rao, P.S.C., and L.S. Lee*. "Sorption of Organic Chemicals from Multi-solvent and Multi-sorbate Mixtures." In: *Health and Environmental Research on Complex Organic Mixtures*, (edited by: R.H. Gray, E.K. Chess, P.J. Mellinger, R.G. Riley, and D.L. Springer) DOE 62 Symposium Series, Pacific Northwest Lab., Richland, WA, 1987, pp. 457-471.
6. 1988. Rao, P.S.C., R.E. Jessup and J.M. Davidson. "Mass Flow and Dispersion." In: *Environmental Chemistry of Herbicides*, (edited by: R. Grover), CRC Press, Inc., Boca Raton, FL, Vol. 1, 1988, pp. 21-43.
7. 1989. Brusseau, M.L.*, and P.S.C. Rao. "Sorption Nonideality During Organic Contaminant Transport in Porous Media." *Crc Critical Review in Environmental Control*, Vol. 19, 1989, p. 33-99.
8. 1989. Rao, P.S.C., J.W. Jones, and G. Kidder. 1989. "Development, Validation, and Applications of Simulation Models for Agroecosystems: Problems and Perspectives." In: *Ecology Of Arable Land*, (edited by: M. Clarhom and L. Bergstrom), Kluwer Academic Publishers, Dordrecht, The Netherlands. pp. 253-259.

9. 1989. Rao, P.S.C., L.S. Lee, P. Nkedi-Kizza, and S.H. Yalkowsky. "Sorption and Transport of Organic Pollutants at Waste Disposal Sites." In: *Toxic Organic Chemicals in Porous Media*, (edited by: Z. Gerstl, Y. Chen, U. Mingelgrin, and B. Yaron), 1989, pp. 176-192.
10. 1990. Wagenet, R.J. and P.S.C. Rao. "Modeling Pesticide Fate in Soils." In: *Pesticides in the Soil Environment: Processes, Impacts and Modeling*, (Edited by: H.H. Cheng et. al.) Soil Sci. Book Series No. 2, Soil Sci. Soc. Amer., Madison, WI, 1990, pp. 351-399.
11. 1990. Gillham, R.W., and P.S.C. Rao. "Transport, Distribution, and Fate of VOC's in Groundwater." In: *Significance and Treatment of Volatile Organic Compounds in Water Supplies*, (edited by: N. Ram, R. Christman, and K. Cantor) Lewis Publishers, 1990, pp. 141-179.
12. 1992. Brusseau, M.L., and P.S.C. Rao. "Sorption Kinetics of Organic Chemicals: Methods, Models, and Mechanisms." In: *Kinetics of Physicochemical Phenomenon in Soils*, (edited by: D. Sparks et. al.), Special Publication No. 27, pp. 281-302, American Soc. Agronomy, Madison, WI.
13. 1992. Brusseau, M.L., P.S.C. Rao, and C.A. Bellin. "Modelling Coupled Process in Porous Media: Sorption, Transformation, and Transport of Organic Solutes." In: *Advances in Soil Science*, 1992, pp. 147-184, Academic Press, NY.
14. 1993. Rao, P.S.C., C.A. Bellin, and M.L. Brusseau. "Coupling Sorption, Biodegradation, and Transport of Organic Contaminants in Soils: Paradigms and Paradoxes." In: *Sorption and Degradation of Pesticides and Organic Chemicals in Soils*, Special Publication No. 32, 1993, pp. 1-26, Soil Sci. Soc. Amer., Madison, WI.
15. 1993. Rao, P.S.C. and W.A. Alley. "Pesticides." In: *Regional Groundwater Quality*, VNR Publishers, Inc., NY, p. 345-382.
16. 1994. Augustijn, D.C.M., D. Dai, P.S.C. Rao and A.L. Wood. "Solvent flushing dynamics in contaminated soils." In: *Transport and Reactive Processes in Aquifers*, (Eds., Th. Dracos and F. Stauffer), A.A. Balkema, Amsterdam, 1994, pp. 557-562.
17. 1995. Rao, P.S.C., C.A. Bellin, and L.S. Lee. 1995. "Sorption and biodegradation of organic contaminants in soils: Conceptual representation of process coupling." Chapter 21, In: *Environmental Impact of Soil Component Interactions*, Volume I, (Eds., P.M. Huang et. Al.), Lewis Publishers, Inc., Boca Raton, FL.
18. 1997. Augustijn, D.C.M., L.S. Lee, R.E. Jessup, P.S.C. Rao, M.D. Annable, and A.L. Wood. 1997. "Remediation of Soils and Aquifers Contaminated with Hydrophobic Chemicals: Theoretical Basis for the Use of Cosolvents." Chapter 15, pp. 231-250, In *Subsurface Remediation*, Eds., C.H. Ward et al., Ann Arbor Press, Inc., Chelsea, MI.
19. 1999. Annable, M.D., J.W. Jawitz, R.K. Sillan, and P.S.C. Rao. "In Situ Solubilization by Cosolvents and Surfactant/Cosolvent Mixtures." In: *Field Testing of Innovative Remediation Technologies*, American Chemical Society, Washington, D.C.
20. 2001. Rao, P.S.C., H. Kim, and M.D. Annable. Air-Water Interfacial area. Chapter 3.3.6, in *Methods of Soil Analysis*, Soil Science Society of America, Madison, WI

21. 2001. Saripalli. K.P., P.S.C. Rao, and M.D. Annable. Measuring Interfacial Areas of Immiscible Fluids. Chapter 7.6 in *Methods of Soil Analysis*, Soil Science Society of America, Madison, WI

d. Selected Journal Articles (1985-2006):

1. 1985. Rao, P. S. C., A. G. Hornsby, D. P. Kilcrease, and P.Nkedi-Kizza. "Sorption and Transport of Toxic Organic Chemicals in Mixed-Solvent Systems: Model Development and Preliminary Evaluation." *Jour. Env. Qual.*, Vol. 14, 1985, p. 376-383.
2. 1985. Ou, L. T., K. S. V. Edvardsson, P. S. C. Rao, and J. E. Thomas. "Aerobic and Anaerobic Degradation of Aldicarb in Soils." *Jour. Agr. Food Chem.*, Vol. 33, 1985, p. 72-78.
3. 1985. Wagenet, R.J., and P. S. C. Rao. "Basic Concepts of Modeling Pesticide Fate in the Crop Root Zone." *Weed Sci.*, Vol. 33 (Suppl. #2), 1985, p. 25-32.
4. 1985. Rao, P.S.C., and R. J. Wagenet. "Spatial Variability of Pesticides in Field Soils: Methods for Data Analysis and Consequences." *Weed Sci.*, Vol. 33 (Suppl. #2), 1985, p. 18-24.
5. 1985. Ogram, A. V.*, R. E. Jessup, L. T. Ou, and P. S. C. Rao. "Effects of Sorption on Biological Degradation Rates of (2,4-Dichlorophenoxy) - Acetic Acid in Soils." *Appl. Env. Micro.*, Vol. 49, 1985, p. 582-587.
6. 1985. Nkedi-Kizza, P.*, P. S. C. Rao, and A. G. Hornsby. "Influence of Organic Cosolvents on Sorption of Hydrophobic Organic Chemicals by Soils." *Env. Sci. Tech.*, Vol. 19, 1985, p. 975-979.
7. 1985. Bilkert, J. N.*, and P. S. C. Rao. "Sorption and Leaching of Nonfumigant Nematicides in Soils." *Jour. Env. Sci. Health*, Part B, Vol. B20, 1985, p. 1-26.
8. 1985. Ou, L. T., K. S. V. Edvardsson, P. S. C. Rao, and J. E. Thomas. "Aerobic and Anaerobic Degradation of Aldicarb in Soils." *Jour. Agr. Food Chem.*, Vol. 33, 1985, p. 72-78.
9. 1985. Rao, P. S. C., A. G. Hornsby, D. P. Kilcrease, and P.Nkedi-Kizza. "Sorption and Transport of Toxic Organic Chemicals in Mixed-Solvent Systems: Model Development and Preliminary Evaluation." *Jour. Env. Qual.*, Vol. 14, 1985, p. 376-383.
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11. 1986. Ou, L. T., J. E. Thomas, K. S. V. Edvardsson, P. S. C. Rao, and W. B. Wheeler. "Aerobic and Anaerobic Degradation of Aldicarb in Aseptically Collected Soils." *Jour. Env. Qual.*, Vol. 15, 1986, p. 356-363.
12. 1986. Woodburn, K. B.*, P. S. C. Rao, M. Fukui, and P. Nkedi-Kizza*. "Solvophobic Approach for Predicting Sorption of Hydrophobic Organic Chemicals on Synthetic Sorbents and Soils." *Jour. Contam. Hydrol.*, Vol. 1, 1986, p. 227-241.
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14. 1987. Seyfried, M. S.*, and P. S. C. Rao. "Solute Transport in Undisturbed Columns of an Aggregated Tropical Soil: Preferential Flow Effects." *Soil Sci. Soc. Amer. Jour.*, Vol.51, 1987, p. 1434-1444.
15. 1987. Lee, L.S.*, P.S.C. Rao, and I. Okuda*. "Equilibrium Partitioning of Polycyclic Aromatic Hydrocarbons from Coal Tar into Water." *Env. Sci. Technol.*, Vol. 26. Pp.
16. 1987. Jones, R. L., A. G. Hornsby, P. S. C. Rao, and M. P. Anderson. "Movement and Degradation of Aldicarb Residues in the Saturated Zone Under Citrus Groves on the Florida Ridge." *Jour. Contam. Hydrol.*, Vol. 1, 1987, pp. 265-285.
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18. 1988. Seyfried, M. S.*, and P. S. C. Rao. "Kinetics of Nitrogen Mineralization in Costa Rican Soils: Model Evaluation and Pretreatment Effects." *Plant & Soil*, Vol.106, 1988, p.159-169.
19. 1988. Rhue, R.D., P.S.C. Rao, and R.E. Smith. "Vapor-Phase Adsorption of Alkylbenzenes and Water on Soils and Clays." *Chemosphere*, Vol. 17, 1988, pp. 727-741.
20. 1988. Ou, L. T., P. S. C. Rao, K. S. V. Edvardsson, R. E. Jessup, A. G. Hornsby, and R. L. Jones. "Kinetics of Aldicarb Degradation in Soils." *Pesticide Sci.*, Vol.23, 1988, p.1-12.
21. 1988. Reddy, K. R., R. E. Jessup, and P. S. C. Rao. "Nitrogen Dynamics in a Eutrophic Lake Sediment." *Hydrobiologia*, Vol.159, 1988, p.177-188.
22. 1988. Jones, R.L., A.G. Hornsby, and P.S.C. Rao. "Degradation and Movement of Aldicarb Residues in Florida Citrus Groves." *Pesticide Sci.*, Vol. 23, 1988, p. 307-325.
23. 1989. Brusseau, M.L.*, P.S.C. Rao, R.E. Jessup, and J.M. Davidson. "Flow Interruption: A Method for Investigating Sorption Nonequilibrium." *Jour. Contam. Hydrol.*, Vol. 4, 1989, p. 223-240.
24. 1989. Brusseau, M.L.*, R.E. Jessup, and P.S.C. Rao. "Modeling the Transport of Solute Influenced by Multi-Process Nonequilibrium." *Water Resour. Res.*, Vol. 26, 1989, p. 1971-1988.
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26. 1989. Lee, L.S.*, P.S.C. Rao, P. Nkedi-Kizza*, and J.J. Delfino. "Influence of Solvent and Sorbent Characteristics on Distribution of Pentachlorophenol in Octanol-Water and Soil-Water Systems." *Environ. Sci. Technol.*, Vol. 24, 1989, p. 654-661.
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