Reviews on books, internet and scientific media

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Clark M.M.: Transport Modeling for Environmental Engineers and Scientists, 2nd edition

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The release of the second edition of *Transport modeling for Environmental Engineers and Scientists* is an introduction to modeling of mass and momentum transport processes in the air, water, and soil environments. The first edition was published in 1996. The second edition has extended its focus on the physical chemistry of selected biological analyses and nano-scale phenomena.

Areas expanded include: cascade impacts; ultracentrifugation and biomolecules; coagulation modeling and breakup; zeta-potential, streaming-potential, and surface forces; octanol–water partition coefficients; Langmuir absorption; hydrogen bonds and surfactants; chromatography and flow-field fractionation; nanofluidics and slip flows; capillarity, contact angle and hydrophobicity; Donnan, hindered, and Knudsen diffusion; osmotic pressure and reverse osmosis; disinfection and disinfection byproducts,

catalysis and enzymes; diffusion-controlled reactions; and tracers.

The book is divided into ten chapters. At the end of each chapter, a summary is provided to emphasize the main points covered. The summary helps readers to recall the ideas discussed. In addition, there are exercises at the conclusion of each chapter, which further aid in understanding the concepts applied through mathematical formulae and theories and/or laws. New and expanded exercises have been added to this edition.

Differential equations and algebra are used to explain the processes and how they may be applied to different situations. Students with a background in physics, chemistry, or engineering should find the mathematics quite accessible.

The four appendices provide easy references for review of vectors, equations of fluid mechanics, convection diffusion, and physical properties of differing transport media. SI units and physical properties are detailed in Appendix 1.

This is indeed a significant contribution to the literature and is a useful book for students, scientists, and engineers interested in mathematical modeling in typical environmental situations.

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