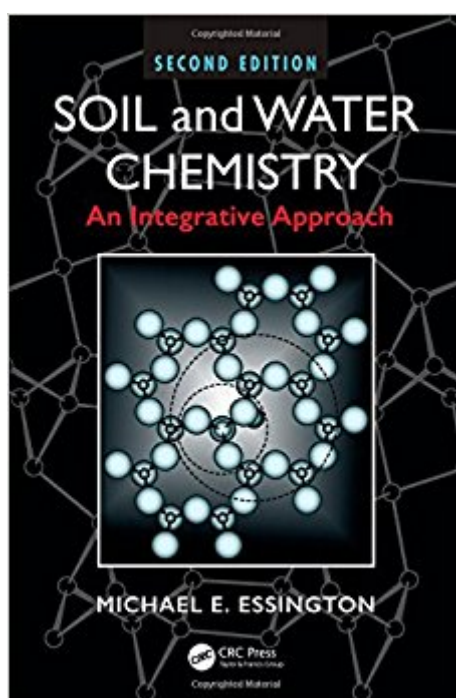




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Soil And Water Chemistry: An Integrative Approach, Second Edition



Synopsis

The second edition of a bestseller, *Soil and Water Chemistry: An Integrative Approach* maintains the balanced perspective that made the first edition a hugely popular textbook. The second edition includes new figures and tables, new chapters, and expanded exercises in each chapter. It covers topics including soil chemical environment, soil minerals, soil organic matter, cation exchange, oxidation-reduction, mineral weathering and solubility, surface chemistry and adsorption reactions, acidity and salinity in soil materials, and chemical thermodynamics applied to soil systems. See What's New in the Second Edition: Extensive section that details the sources, speciation, and the general behavior of elements in soils Expanded section on crystal structure, updated phyllosilicates classifications scheme, inclusion of sepiolite-palygorskite group, and expanded x-ray diffraction section Discussion of surface runoff losses of phosphorus from soil and description of the inductivity coupled argon plasma-mass spectroscopy (ICP-MS) analytical technique for determining elemental concentrations in soil solution Coverage of the influence of redox processes on the soil chemistry of nonelectroactive elements Description of the electrokinetic phenomenon and investigation of the influence of temperature on adsorption Expanded discussion on the application of chemical thermodynamics to soil systems A solutions manual is available upon qualifying course adoption. Still one of the only texts on this subject, this book provides a comprehensive, modern, and balanced coverage of the chemical and mineralogical characteristics of soils and their chemical processes. It contains more information and topic coverage than required for an average, single-semester course. This extensive coverage is by design, giving you the latitude to pick your own essential topics while providing additional information or a more advanced treatment when needed. Figures and tables make the information accessible and each problem has been tested and is relevant and doable, but asks more of students than to simply generate a number. This format allows students to understand the concepts and recognize that their computations have physical meaning.

Book Information

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Customer Reviews

From the First Edition: Overall, this book comprehensively presents the chemical and mineralogical characteristics and processes of soils. The breadth and depth of coverage make this book one of the most thorough available. Numerous figures and tables help simplify the complex principles and reactions described. The book will be a comprehensive source of information for researchers and professionals [dealing with] the effect of soil-water chemistry, interactions, and processes that impact the environment. As usual, the publishers have done an excellent job of editing and preparing a high quality product.

• Journal of Environmental Quality, Vol. 33, No. 4, July/Aug. 2004
congratulate the author on producing an outstanding up-to-date book that sets a higher standard for future environmental science textbooks. I would highly recommend anyone who is interested in the area of soil and water chemistry to purchase this book.

• Vadose Zone Journal, May 2005
"Dr. Essington's book will be an outstanding choice as a textbook for those of us who teach soil chemistry, and will be an excellent resource for anyone working in the area of environmental soil science. He should be congratulated for producing a thorough, well-written book."

• Dr. George F. Vance J.E. Warren Distinguished Professor of Energy and the Environment Department of Renewable Resources University of Wyoming, Laramie
"I continue to be impressed by the quality of writing in this book. The author has a superb command of the subject matter and presents many difficult concepts in an easily understood manner. Material is covered in as complete a fashion as I have seen in any other soil chemistry textbook."

• Dr. Gary Pierzynski, Kansas State University
"I am so glad to see specific chemical reactions to describe the chemistry behind common methods. This is where I think Essington's textbook is really going to excel. This book should also serve as an excellent 'working reference' for geochemists, environmental scientists, and consultants."

• Dr. April L. Ulery New Mexico State University, Las Cruces

Michael E. Essington is professor of soil and water chemistry in the Institute of Agriculture at the University of Tennessee in Knoxville. In addition to teaching courses in soil chemistry and clay

mineralogy, his special research interests center on the role of aqueous speciation in environmental chemistry, with particular emphasis on trace element adsorption and precipitation phenomena. These interests have resulted in more than 200 publications and technical reports. Dr. Essington received his BSc in agriculture from New Mexico State University in 1980 and his PhD in soil science from the University of California, Riverside, in 1985. He was a research scientist at the Western Research Institute in Laramie, Wyoming, from 1985 to 1990 and has been at the University of Tennessee since then. He is a member of the Soil Science Society of America, the American Society of Agronomy, Sigma Xi, and Gamma Sigma Delta. He is a fellow of the Soil Science Society of America and the American Society of Agronomy. Dr. Essington's professional activities include serving as an associate editor and technical editor for the Soil Science Society of America Journal and as soil chemistry division chair and member of the board of directors for the Soil Science Society of America.

Nice explanations and figures to support learning. A guide for any soil scientist

Well written and very organized. Great examples that are explained clearly.

Very great delivery time and great product!

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