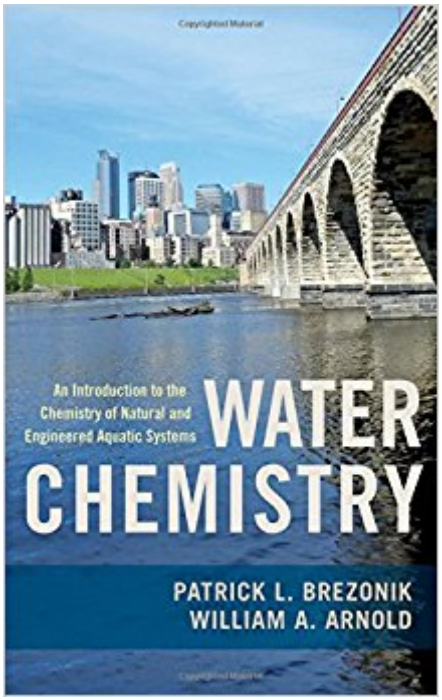
Water Chemistry: An Introduction To The Chemistry Of Natural And Engineered Aquatic Systems



Synopsis

Water Chemistry provides students with the tools necessary to understand the processes that control the chemical species present in waters of both natural and engineered systems. After providing basic information about water itself and the chemical composition of water in environmental systems, the text covers the necessary theory (thermodynamics, activity, and kinetics) and background material to solve problems. It emphasizes that both equilibrium and kinetic processes are important in aquatic systems. The book does not merely focus on inorganic constituents, but also on the fate and reactions of organic chemicals.The solving of quantitative equilibrium and kinetic problems using mathematical, graphical, and computational tools is emphasized throughout presentations on acid-base chemistry, complexation of metal ions, solubility of minerals, and oxidation-reduction reactions. The use of these problem-solving tools is then extended in the presentation of topics relevant to natural systems, including dissolved oxygen, nutrient chemistry, geochemical controls on chemical composition, photochemistry, and natural organic matter. The kinetics and equilibria relevant to engineered systems (e.g., chlorination and disinfection chemistry, sorption and surface chemistry) and organic contaminant chemistry are also discussed. Numerous in-chapter examples that show the application of theory and demonstrate how problems are solved using algebraic, graphical, and computer-based techniques are included. Examples are relevant to both natural waters and engineered systems.

Book Information

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Customer Reviews

Patrick L. Brezonik is Professor Emeritus of Civil Engineering at the University of Minnesota. His research interests are focused on natural aquatic systems, including nutrient cycling and chemistry, metal complexation by natural organic matter, and applications of remote sensing to aquatic systems.William A. Arnold is the Joseph T. and Rose S. Ling Professor in the Department of Civil Engineering at the University of Minnesota. His research interests are in the areas of transformation, transport, and remediation of anthropogenic chemicals in the environment, including surface-mediated oxidation/reduction reaction, photochemistry, and partitioning.

There are some errors within the book with some of the examples and occasional typos, but overall this is a fantastic water chemistry book. My professor knows the authors and spoke very highly of them, though admitted that she had seen a few mistakes. By "a few" I mean less than 5 throughout the majority of the text.

Came on time and as described.

I loved the class and the book was very helpful! At times it was hard to follow and used different terminology than my professor, but overall it was a good textbook.

In great condition! Huge book.

I have taken a number of water chemistry classes during my undergraduate and graduate education. This water chemistry book is best I have used. I have used the Benjamin and the Snoeyink for courses also. This new text is very well written and had numerous worked examples and is written with a stronger background in chemistry. It is written more in the style and background of a chemist and not an engineer. This really allows for a clear explanation and understanding of the material. I constantly find myself coming back to this particular text when I need to do any kind of chemical numerical modeling. It is a great reference to have. It also covers a much broader amount of topics compared to the other industry standard texts. This book is great for someone who needs an all in one general chemistry reference. I would also recommend pairing with the Benjamin if you don’t mind purchasing two books as that is a more concise text with other great examples on the most basic concepts of the field.

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