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Analytical Chemistry And Quantitative Analysis

ANALYTICAL CHEMISTRY
and
QUANTITATIVE ANALYSIS



David S. Hage • James D. Carr



Synopsis

Analytical Chemistry and Quantitative Analysis presents concepts and procedures in a manner that reflects the practice and applications of these methods in today's analytical laboratories. These methods are illustrated by using current examples from fields that include forensics, environmental analysis, medicine, biotechnology, food science, pharmaceutical science, materials analysis, and basic research. The fundamental principles of laboratory techniques for chemical analysis are introduced, along with issues to consider in the appropriate selection and use of these methods including the proper use and maintenance of balances, laboratory glassware, and notebooks, as well as mathematical tools for the evaluation and comparison of experimental results.

Basic topics in chemical equilibria are reviewed and used to help demonstrate the principles and proper use of classical methods of analysis like gravimetry and titrations. Common instrumental techniques are also introduced, such as spectroscopy, chromatography and electrochemical methods. Sideboxes discuss other methods, including mass spectrometry and NMR spectroscopy, throughout the text.

Book Information

Hardcover: 720 pages

Publisher: Pearson; 1 edition (February 19, 2010)

Language: English

ISBN-10: 0321596943

ISBN-13: 978-0321596949

Product Dimensions: 8.6 x 1.3 x 11 inches

Shipping Weight: 3.8 pounds (View shipping rates and policies)

Average Customer Review: 3.5 out of 5 stars 9 customer reviews

Best Sellers Rank: #302,916 in Books (See Top 100 in Books) #84 in Books > Science & Math > Chemistry > Analytic #1181 in Books > Textbooks > Science & Mathematics > Chemistry

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"Analytical Chemistry and Quantitative Analysis" presents concepts and procedures in a manner that reflects the practice and applications of these methods in today's analytical laboratories. These methods are illustrated by using current examples from fields that include forensics, environmental analysis, medicine, biotechnology, food science, pharmaceutical science, materials analysis, and basic research. The fundamental principles of laboratory techniques for chemical analysis are introduced, along with issues to consider in the appropriate selection and use of these

methods—including the proper use and maintenance of balances, laboratory glassware, and notebooks, as well as mathematical tools for the evaluation and comparison of experimental results. Basic topics in chemical equilibria are reviewed and used to help demonstrate the principles and proper use of classical methods of analysis like gravimetry and titrations. Common instrumental techniques are also introduced, such as spectroscopy, chromatography and electrochemical methods. Sideboxes discuss other methods, including mass spectrometry and NMR spectroscopy, throughout the text.

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James D. Carr is a professor of analytical chemistry in the Department of Chemistry at the University of Nebraska, Lincoln. He received his B.S. in chemistry from Iowa State University and his Ph.D. in chemistry from Purdue University. He was then a postdoctoral fellow at the University of North Carolina, Chapel Hill. He is a full professor at the University of Nebraska, Lincoln. Dr. Carr is the author of approximately 50 research publications and articles. He is the coauthor of *Chemistry: A World of Choices* (McGraw-Hill), a liberal arts general chemistry textbook. He is also the author or coauthor of several versions of general chemistry and quantitative analysis lab manuals and study guides (genchem only). He has won several teaching awards, including the University of Nebraska Distinguished Teaching Award in 1981; University of Nebraska Recognition Awards for Contributions to Students in 1992, 1993, 1994, 1995, and 2000; and the University of Nebraska Outstanding Teaching and Instructional Creativity Award in 1996. He is a member of the University of Nebraska, Lincoln Academy of Distinguished Teachers and received the Distinguished Teacher Award from the Nebraska Teaching Improvement Council in 2001.

The course I took covered all chapters. I thought this was a GREAT textbook for learning analytical

chemistry. If you need to save time, get the Solutions Manual for detailed explanations to the chapter exercises. The only other sources I used was Quantitative Chemical Analysis (Harris, 8th ed.) and the ChemLibre online texts for a particular experiment of extracting and measuring caffeine in chocolate.

no issue

I gave 5 stars because .com is the best. I use to buy from Barnes & Noble, but no more. I don't even go into the store. They are horrible, with horrible service and their NookStudy doesn't even work on the nook (PC only). .com has always sent excellent condition books and most items arrive early. I ordered something with two day shipping and it was here a day early. Wonderful.

The book is the best choice for studying analytical chemistry. It commbines the stuff from Analytical textbooks by Harris and Skoogg presents it in a very understandable manner.

Excellent

Great

Very poor at explaining most things. Mentions the existence of methods and concepts but doesn't explain them, then has questions about them at the end of the chapter. Vague, generalized blurbs don't promote a deep understanding of the subject. Normally I can clarify my confusion by careful and thoughtful reading. Not so with this book. Between organic, inorganic, and p chem, this is the worst chem book I've used. The further I get, the more confident I feel in my opinion.

We already have three excellent-to-very-good undergraduate analytical chemistry texts on the market - Harris (ISBN 146413538X), Skoog (ISBN 0495558281) and Christian (ISBN 0470887575). All 3 have been around forever and are now refined to the point of near perfection. A recent entrant has already tried to penetrate this market and failed: David Harvey's "Modern Analytical Chemistry" (ISBN 0072375477), which is a book I strongly like. Do yourself a favor & hunt down a used copy of that or download the revised 2nd edition in PDF from the author's website at Depauw U. Why pay for a textbook when something so good is available for free? If you look at the table of contents of Hage & Carr (below) and compare it to the above "big 3" you'll see there's hardly any difference.

Every book covers the same material in pretty much the same way. Other things not to like about this book: 1. the price, for one. Ouch. It's just too expensive for what it is. And if you want the solutions manual - guess what? - that's another \$70. 2. The text is presented in two columns on every page. Hence, the information density is very high. I'll guess this was done to reduce the page count but it really hurts readability. The authors and publisher should study their competitor, Daniel Harris, and see why he's so enjoyable to read: besides his skill as a writer, his books are well-presented with wide margins which make effective use of whitespace. These are not trivial points to consider when it comes to textbook design. 3. Why was all this instrumental analysis material included in what should be a book on basic quantitative analysis? See my review of David Harvey's book for my low opinion of that practice.

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