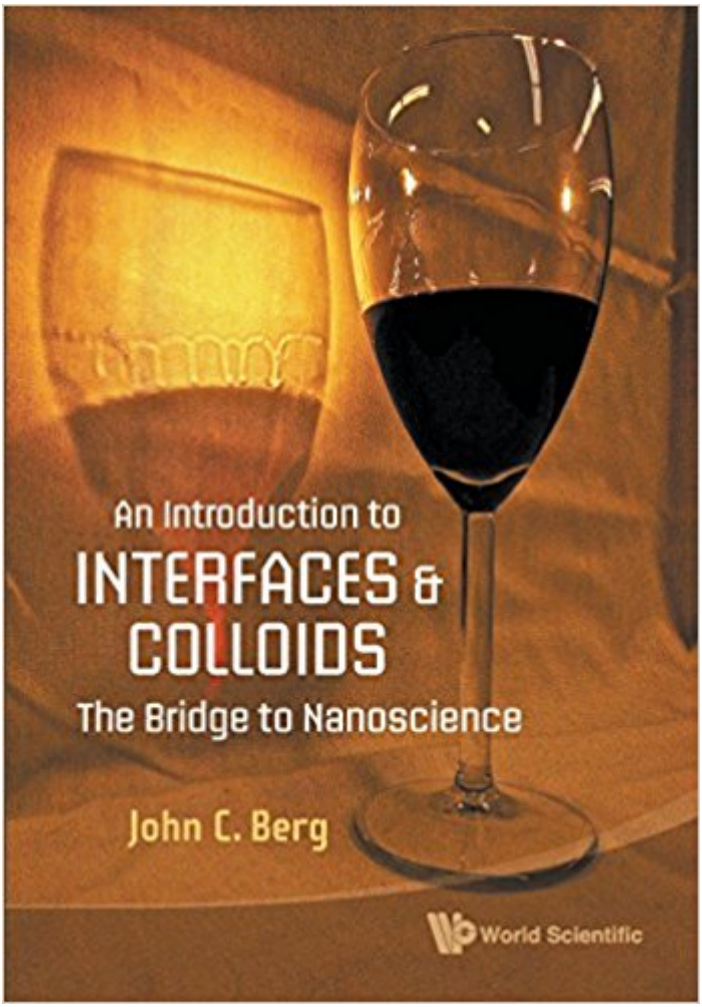
An Introduction To Interfaces And Colloids: The Bridge To Nanoscience



Synopsis

The brings readers with no prior knowledge or experience in interfacial phenomena, colloid science or nanoscience to the point where they can comfortably enter the current scientific and technical literature in the area. Designed as a pedagogical tool, this book recognizes the cross-disciplinary nature of the subject. To facilitate learning, the topics are developed from the beginning with ample cross-referencing. The understanding of concepts is enhanced by clear descriptions of experiments and provisions of figures and illustrations.

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Customer Reviews

"Born of decades of diverse experience performing research and teaching in the field of surface and colloid science, Prof. Berg’s new textbook is a must buy for students just entering the field, as well as for experts. I find myself frequently referring to the book as a reference when writing grants. Prof. Berg’s organization of the subject matter, combined with his exquisitely clear descriptions that provide a molecular level understanding of phenomena, have set a new standard for textbooks in the field." -- Journal of Colloid and Interface Science "it serves as an excellent entry into the field, giving the student more than enough support to understand the concepts ... Anyone working in the area of colloids/interfaces should have a copy of this book. It makes an excellent reference book if you are an advanced practitioner and an excellent text if you are just getting started." --Chemical Engineering Education

The textbook seeks to bring readers with no prior knowledge or experience in interfacial

phenomena, colloid science or nanoscience to the point where they can comfortably enter the current scientific and technical literature in the area. Designed as a pedagogical tool, this book recognizes the cross-disciplinary nature of the subject. To facilitate learning, the topics are developed from the beginning with ample cross-referencing. The understanding of concepts is enhanced by clear descriptions of experiments and provisions of figures and illustrations.

I have taken two interface and colloids courses (one with Professor Berg), and am currently a professor at Duke in the area of chemistry and nanomaterials. Dr. Berg's book, resulting from decades of diverse experience performing research and teaching in the field, is an exquisitely clear introduction to interfaces, colloids, and their central role in nanoscience and everyday life. I have reviewed many books in the area of nanoscience and colloids, this is by far the best, it has no peer. Further, as an "expert" I find it the most comprehensive reference for information on the topic. Dr. Berg manages to describe things in a way students can intuitively understand, but he also derives the equations necessary for quantitative prediction of complex phenomena. After taking his course several years ago, I find myself often referring to his book when I want to refresh my knowledge in an area, or learn something new (before it was published this year he sold it to students for his class - I have treasured this book and have often told him he should publish it). The "fun things to do" at the end of each chapter are indeed fun, but also extremely simple and illustrative experiments one can show a class, or do oneself, to further enhance one's understanding of how molecular-level interactions control the world around us. No complicated materials are needed - want to measure the thickness of the water-air interface? All you need is a laser pointer and a piece of paper. Ever wonder why you can fill a cup of water over the brim? Why cleaning products work better than water? Berg will give you the complete molecular-level understanding, no matter what your background. For a student interested in nanoscience, this is the place to start, this book will give you the background you need to understand the literature (often to a better extant than those that write it!). For educators - get this book! It will make your job of coming up with good explanations so much easier! Dr. Berg has worked it all out. My only wish is that Dr. Berg comes out with a supplement describing his full gamut of laboratory experiments. But I truly can not praise this book enough, so well organized, so clear, so well thought out, so much knowledge. What are you waiting for? Buy it!

This book covers all current aspects of interface and colloid science and fills nicely the gap between Lyklemas series on Fundamentals of Interface and Colloid Science and much shorter books (e.g., those of Butt et al. or that by Hiemenz & Rajagopalan). It is very well written and has a very pleasant

layout and typography. Maybe the best argument for purchasing this book is the well-balanced mix between figures and equations presented in a well-balanced mix of examples with theoretical background. The theory goes sufficiently deep into detail and will inform graduate students (and those beyond this level) very well. Finally the price is an argument!

This is a great compilation of the complete subject matter. It brings the reader along from the beginning thinking on this subject and builds from chapter to chapter. I think it a valuable reference book for those doing complex techincal thinking on interfaces and colloids. It also is a great text for those learning the subject matter. The author has a great way of bringing in practical examples of how to apply the theory. A great addition to my technical library.

Prof. John Berg has spent years teaching courses in surfaces and colloid science. He has consolidated his curriculum here, combined it with his broad research perspectives, and crafted this textbook with the communication skills that have made him a decorated educator. This book will make an excellent platform for teaching these topics to undergraduates in chemical engineering and related fields. Buy it and tell others.Philip Harding

It is the best book on this subject.

There are some typos in Berg but otherwise it seems to be a useful textbook to discuss colloids and interfaces

Good book

The year is 2014. There are several examples in this text that are outdated or obscure. The illustrations are boring, two-dimensional, vague, and not helpful in reinforcing the concepts being described. The sequence in which the content is presented is poorly conceived. These flaws may be present by design as they give the author reasons to publish future revisions.

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