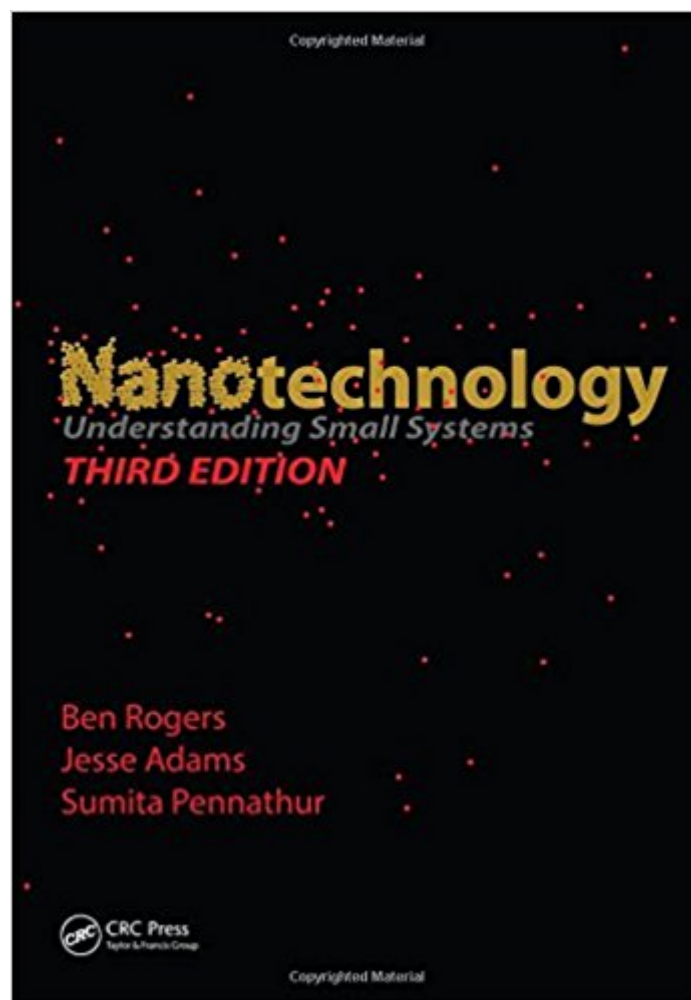




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# Nanotechnology: Understanding Small Systems, Third Edition (Mechanical And Aerospace Engineering Series)



## Synopsis

An Accessible, Scientifically Rigorous Presentation That Helps Your Students Learn the Real Stuff Winner of a CHOICE Outstanding Academic Book Award 2011 "Ã¢â¬Â takes the revolutionary concepts and techniques that have traditionally been fodder for graduate study and makes them accessible for all. Ã¢â¬Â outstanding introduction to the broad field of nanotechnology provides a solid foundation for further study. Ã¢â¬Â Highly recommended." Ã¢â¬Â N.M. Fahrenkopf, University at Albany, CHOICE Magazine 2011 Give your students the thorough grounding they need in nanotechnology. A rigorous yet accessible treatment of one of the world's fastest growing fields, Nanotechnology: Understanding Small Systems, Third Edition provides an accessible introduction without sacrificing rigorous scientific details. This approach makes the subject matter accessible to students from a variety of disciplines. Building on the foundation set by the first two bestselling editions, this third edition maintains the features that made previous editions popular with students and professors alike. See What's New in the Third Edition: Updated coverage of the eight main facets of nanotechnology Expanded treatment of health/environmental ramifications of nanomaterials Comparison of macroscale systems to those at the nanoscale, showing how scale phenomena affects behavior New chapter on nanomedicine New problems, examples, and an exhaustive nanotech glossary Filled with real-world examples and original illustrations, the presentation makes the material fun and engaging. The systems-based approach gives students the tools to create systems with unique functions and characteristics. Fitting neatly between popular science books and high-level treatises, the book works from the ground up to provide a gateway into an exciting and rapidly evolving area of science.

## Book Information

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## Customer Reviews

"I use this book for undergrad freshmen and sophomore students. This book is useful to introduce the concept of nanotechnology to undergrad students in their very early stage of study." [—â€œEui-Hyeok Yang, Stevens Institute of Technology, Hoboken, New Jersey, USA](#)

"The book is well-written with lots of examples and historic perspectives that certainly make reading more enjoyable and stimulating." [—â€œDr. Prabhu Arumugam, Louisiana Tech University, Ruston, USA](#)

"The main strengths of this book are its illustrations, which are well conceived and layered from the viewpoint of attracting student attention, while also containing a sufficient level of detail to warrant repeated reference. While the "back of the envelope" calculations can come across as rather simplistic, I like it from the viewpoint that it helps students identify a degree of personal connection to the concept. The connection to emerging research ideas and even some example commercial products helps highlight the dynamic coverage of the topics. Through classifying chapters as per the areas of mechanics, fluidics, electronics, biology and medicine, the authors are able to relate their material to core disciplines, while emphasizing unifying and converging ideas." [—â€œNathan S. Swami, Electrical & Computer Engineering, University of Virginia, Charlottesville, USA](#)

"Overall, this book takes engaging and entertaining style, which makes this book very readable, and provides a gateway into an exciting and rapidly evolving area of science." [—â€œMei Zhang, Florida State University](#)

[—â€œ](#) a comprehensive overview of nearly all aspects of modern and meaningful nano science and technology. [—â€œ](#) accessible to students with a wide variety of backgrounds, strengths, and disciplines, especially within a full semester course on nano science and technology." [—â€œMichael J. Escuti, North Carolina State University](#)

[—â€œ](#) describes the plurality of nanotechnology in a good manner, both from its historical, chemical, physical and biological aspects [—â€œ](#) [—â€œ](#) [—â€œ](#) Ola Nilsen, University of Oslo, Norway" [—â€œ](#) an excellent introduction to a wide range of nanotechnology topics and the authors make the material fun to learn. [—â€œ](#) The authors are able to strip down difficult topics and present them in an easy to read formula." [—â€œDonald J. Sirbulu, Department of NanoEngineering, UC San Diego](#)

Ben Rogers is a writer and an engineer (BS 2001; MS 2002, University of Nevada, Reno). He has

done research at Nanogen, the Oak Ridge National Laboratory, and NASA's Jet Propulsion Laboratory, and published many technical papers, as well as fictional works and essays (which can be found at <http://readrogers.com/>). He is currently the principal engineer at NevadaNano and lives in Reno with his wife and two daughters. Jesse Adams (BS 1996, University of Nevada; MS 1997 and PhD 2001, Stanford University) is the vice president and CTO of NevadaNano. He is working to bring multifunctional microsensor technology to the chemical sensing market space. Sumita Pennathur is an associate professor of mechanical engineering at the University of California, Santa Barbara (BS 2000, MS 2001, Massachusetts Institute of Technology; PhD 2005, Stanford University). She has been actively contributing to the fields of nanofluidics and nanoelectromechanical systems (NEMS), and has spent some time at both Sandia National Laboratories in Livermore, California, and the University of Twente MESA+ research facility in the Netherlands. When not enveloped in her research work, she can be found either spending time with her husband and two kids or at a local club wailing on her saxophone.

It is an OK overview of nanotechnology. There are conceptual errors and some of the presentation does not relate to nanotechnology, although interesting. The chapter end questions are poor, at best. The "back of the envelope" examples do not follow significant figures rules. It seems more like a first edition than a third.

As a student, I actually don't mind reading this book. It's written in a style that is informative, but not like a stereotypical textbook. It's definitely an introductory book when it comes to the concepts it teaches, but it works perfectly for the course I'm using it for (an introduction to nanoscience course). All in all, a good textbook.

excellent

Perfect

This is an amazing book.

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