Fundamentals of Nanotechnology

Gabor L. Hornyak, John J. Moore, H.F. Tibbals, Joydeep Dutta
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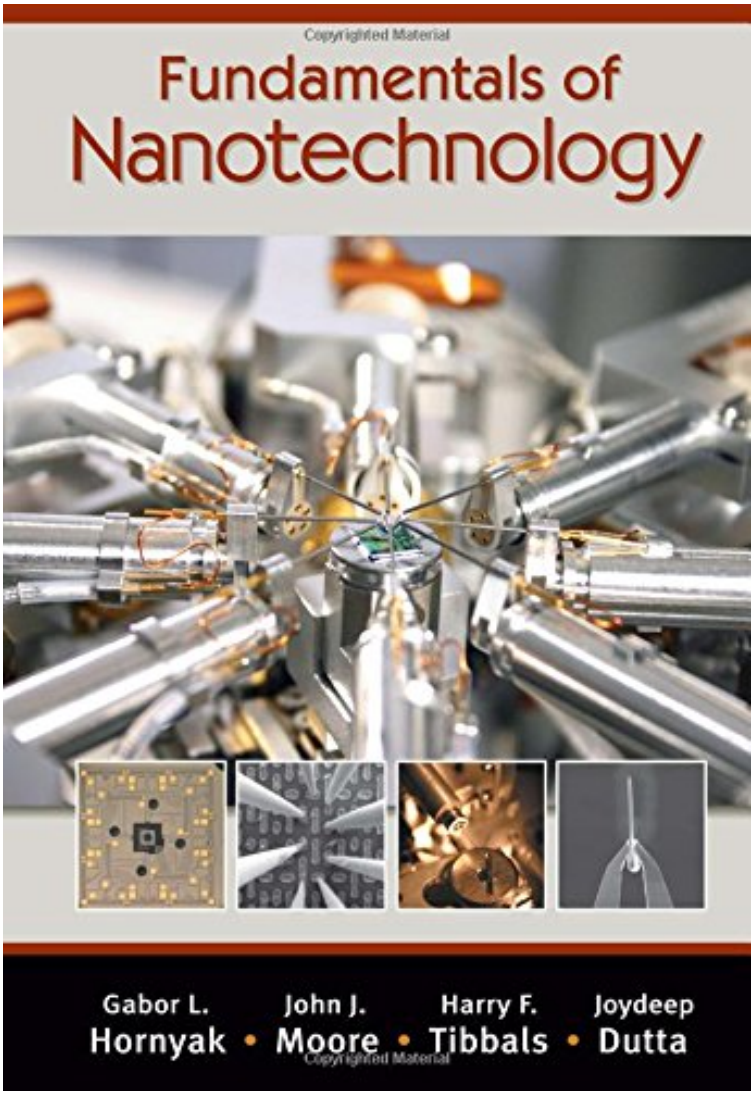

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Gabor L. Hornyak, John J. Moore, H.F. Tibbals, Joydeep Dutta : Fundamentals of Nanotechnology before purchasing it in order to gage whether or not it would be worth my time, and all praised Fundamentals of Nanotechnology:

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WINNER 2009 CHOICE AWARD OUTSTANDING ACADEMIC TITLE! Nanotechnology is no longer a subdiscipline of chemistry, engineering, or any other field. It represents the convergence of many fields, and therefore demands a new paradigm for teaching. This textbook is for the next generation of nanotechnologists. It surveys the fields broad landscape, exploring the physical basics such as nanorheology, nanofluidics, and nanomechanics as well as industrial concerns such as manufacturing, reliability, and safety. The authors then explore the vast range of nanomaterials and systematically outline devices and applications in various industrial sectors. This color text is an ideal companion to Introduction to Nanoscience by the same group of esteemed authors. Both titles are also available as the single volume Introduction to Nanoscience and Nanotechnology Qualifying instructors who purchase either of these volumes (or the combined set) are given online access to a wealth of instructional materials. These include detailed lecture notes, review summaries, slides, exercises, and more. The authors provide enough material for both one- and two-semester courses.

This is one of the best university level textbooks for introducing nanotechnology to students that I have seen so far. It not only covers a wide range of application topics (thin films, biomimetics, nanomagnetism, etc.) but goes into enough depth to explain fundamental concepts with authority. The illustrations and photos are plentiful, well executed and further the understanding of nanoscale systems while engaging the reader. The amount and level of math can be grasped by a sharp undergrad in one of the STEM disciplines, and there are numerous excellent reference tables in here that I have not seen in any other intro or even advanced level nanoscience books. Also, addressing business and nanoscience laboratory considerations is a subject you just dont see discussed in other texts, and helps orient the reader to how research and development relates to these oft unmentioned factors. The range of nanoscale properties that are addressed in here also highlights how interdisciplinary the field of nanotechnology is and the importance of understanding or at least knowing what roles that seemingly disparate fields such as optics, quantum mechanics, organic chemistry play in determining the behavior of a nanoscale system in such a way that novel applications can be realized.. . . Even for more advanced students and professors, this book is good as a refresher / icebreaker for details on nanoscience sub-topics that they may be less familiar with, but wish to begin investigating or remembering. Joel-Anthony Gray, Nanotechwizard.com, January 2014 . . . an outstanding, essential resource for anyone in the field, student or otherwise. It covers the entire spectrum of nanotechnology including nanoelectronics, photonics, nanocomposites, and thin films . . . This comprehensive, highly readable book with extremely high production values can be read and appreciated by experts and non specialists alike. A revolutionary book in a revolutionary field. B. Ransom, formerly, University of California, San Diego, in Choice: Current s for Academic Libraries, August 2009, Vol. 46, No. 1 meets the goal of providing an accessible introduction of this highly interdisciplinary subject to a very diverse group of readers. I highly recommend this textbook for an upper division college seminar course in nanotechnology. It can also serve as a reference book for scientists and engineers, policy makers, and venture capitalists who would like to be introduced broadly to nanotechnology. Liang Tang writing in IEEE NANOTECHNOLOGY MAGAZINE, September 2009About the AuthorNanoThread, Inc., Golden, Colorado, USA Colorado School of Mines, Golden, USA University of Texas Southwestern Medical Center, Dallas, USA Asian Institute of Technology, Pathumthani, Thailand