



Adult Books

Atkinson, William Illsey. ***Nanocosm: Nanotechnology And The Big Changes Coming From The Inconceivably Small.*** NY: AMACOM/American Management Association, 2003.

Since the beginning of the industrial age, many machines have grown steadily smaller even as they have grown more powerful and complex. Now nanotechnology, based on a new science of the infinitesimally small, takes technology beyond most popular definitions of reality, to a realm of molecular machines, cell-sized computers, and other astounding possibilities. With *Nanocosm*, Bill Atkinson reveals a spectacular view of the immediate future of nanotechnology and its applications.

Bainbridge, William Sims. ***Managing Nano-Bio-Info-Cogno Innovations: Converging Technologies In Society.*** Dordrecht, Netherlands: Springer, 2006.

This book provides a unique review of technical developments related to the unification that is rapidly taking place today among nanotechnology, biotechnology, information technology, and cognitive science (NBIC).

It assesses potential for revolutionary applications of these developments and their likely impact in improving the human condition and offers a wide variety of scholarly views on the likely societal impacts and policy implications of these developments and applications, including assessments of educational, economic, commercial, legal, ethical, political, and social implications.

Di Ventra, Massimiliano. ***Introduction to Nanoscale Science and Technology.*** Boston MA: Kluwer Academic Publishers, 2004.

Nanoscale science and technology is a young, promising field that encompasses a wide range of disciplines including physics, chemistry, biology, electrical engineering, chemical engineering, and materials science. With rapid advances in areas such as molecular electronics, synthetic biomolecular motors, DNA-based self-assembly, and manipulation of individual atoms, nanotechnology has captured the attention and imagination of researchers and the general public.

Foster, Lynn E. ***Nanotechnology: Science, Innovation and Opportunity.*** Upper Saddle River, NJ: Prentice Hall PTR, 2005.

Suddenly, nanotechnology isn't science fiction or mere theory: It's becoming one of the world's fastest-growing, highest-impact industries. In *Nanotechnology: Science, Innovation, and Opportunity*, the field's leading experts offer an up-to-

the-minute briefing on where the industry stands now, how it will unfold over the coming decade, and how it will impact you.

Hall, J. Storrs. ***Nanofuture: What's Next for Nanotechnology***. Amherst, NY: Prometheus Books, 2005.

Dr. J. Storrs Hall puts nanotechnology into a historical context, explaining how previous technological developments have affected us, how nanotechnology fits into the historical trends for technologies ranging from motors to medicine, and how the continuation of these trends, with nanotechnology as a strong determining factor, will have a profound impact on the future.

Harmer, Andrea. ***Nanotechnology For Grades 1 – 6+***. Bloomington, IL: Author's House, 2005.

Written primarily for children, but suitable for any audience, *Nanotechnology for Grades 1-6+* is a glimpse into the exciting new field of study in science and engineering for the new millennium, known as nanotechnology. This book will give you a basic understanding of why nanotechnology has become the new "buzz word" in science and why and how scientists, businessmen, engineers, and medical researchers are clamoring to find out more about how we can control and manipulate matter on the atomic scale.

Jones, M. Gail, et al. ***Nanoscale Science: Activities For Grades 6 - 12***. Arlington, VA: NSTA Press, 2007.

Nanoscale Science will help your middle and high school students understand the big implications of tiny technology. Using guided inquiry with open-ended exploration where possible, the book's 20 investigations teach students about the unique properties and behavior of materials at the nanoscale one-billionth of the size of a meter. The activities are organized around five themes: scale, tools and techniques, unique properties and behaviors, nanotechnology applications, and societal implications.

Mulhall, Douglas. ***Our Molecular Future: How Nanotechnology, Robotics, Genetics, And Artificial Intelligence Will Transform Our World***. Amherst NY: Prometheus Books, 2002.

Our Molecular Future explores intriguing possibilities that might answer these questions and many others. Douglas Mulhall describes the exponential changes that may be wrought by the nanotechnology and robotic revolutions. Based on discoveries of today, they promise to reduce the scale of computing to the nanometer—a billionth of a meter—while increasing computing power to almost unimaginable levels.

Poole, Charles P. ***Introduction To Nanotechnology***. Hoboken, NJ: J. Wiley, 2003.

In this fascinating overview of the field the authors provide broad coverage of nanotechnology and its applications, with an eye toward giving researchers in different areas an appreciation of nanotechnological developments outside their own fields of expertise. Rather than focusing on the latest developments in

nanotechnology, the authors use representative examples of research in many fields to focus on the diversity of its applications.

Sargent, Ted. ***The Dance Of Molecules: How Nanotechnology Is Changing Our Lives***. NY: Thunder's Mouth Press, 2006.

In this groundbreaking exploration of the future of nanotechnology, Ted Sargent reveals how all disciplines of science, from medicine to microchips, are converging to create materials using the tiniest scale possible — molecule by molecule. And instead of trying to overcome the natural world, nanotech takes its every move from the perfect, elegant structure of nature itself. Its potential is seemingly endless, with practical implications that will revolutionize the way we live, work, and play.

Shelley, Toby. ***Nanotechnology: New Promises, New Dangers***. London: Zed Books, 2006.

This book explains the fast moving world of the new nanotechnology and who controls it, ranging from medical, energy, computing, and even military interests. It explores the potential consequences--the upsides as well as the downsides - for individuals, the environment, and relations between the powers. Nanotechnology could bridge or widen the gap between developing and industrialised countries - that is a political decision that civil society must address.

Wilson, Mick, et al. ***Nanotechnology: Basic Science And Emerging Technologies***. Boca Raton, FL: Chapman & Hall/CRC, 2002.

Nanotechnology: Basic Science and Emerging Technologies bridges the gap between detailed technical publications that are beyond the grasp of nonspecialists and popular science books, which may be more science fiction than fact. It provides a fascinating, scientifically sound treatment, accessible to engineers and scientists outside the field and even to students at the undergraduate level.

Young Adult Books

Bourne, Marlene. ***MEMS And Nanotechnology For Kids***. Scottsdale, AZ: Bourne Research LLC, 2007.

Small is cool! This book explores what you can find at the micro- and nano-scale, where readers can discover all kinds of amazingly small sensors, structures and materials.

Johnson, Rebecca L. ***Nanotechnology***. Minneapolis, MN: Lerner Publications, 2006.

Part of the 'Cool Science' series, this book is dedicated to the topic of nanotechnology. Middle grade readers are introduced to nanotechnology in five chapters that include an overview of the topic, tools that will come from the technology, the nanofuture, and nanobots. Each chapter is dense with text, with one picture or diagram per page. Fun facts describing important scientists and milestones in the development of the technology are scattered throughout the

chapters. Not only will students find the subject of nanotechnology fascinating, but the book will also raise questions that will encourage discussions in and out of the classroom.

Maddox, Dianne. ***Nanotechnology: Science On The Edge***. Farmington Hills, MI: Blackbirch Press, 2005.

In the exciting field of nanotechnology, the measurement that scientists use is the nanometer -- one-billionth of a meter, or one-millionth the size of a pinhead. Big changes in our world are expected to come from discoveries and inventions at this sub-microscopic level.

Wells, Robert E. ***What's Smaller Than A Pygmy Shrew?*** Morton Grove, IL: A. Whitman, 1995.

In this presentation that goes from small to infinitesimal, Wells compares the size of a tiny animal (a pygmy shrew) to an insect (a ladybug), which is in turn contrasted with one-celled animals, bacteria, molecules, atoms, and sub-atomic particles. Bright, colorful cartoons and a text that looks like hand lettering in a variety of fonts are jauntily arranged across the pages. Readers are encouraged to try to imagine being the sizes of the creatures under discussion.

Media

Microengineering And Nanotechnology [DVD]. 17 min. Cambridge Educational.

This edition of "Science Screen Report" shows how microengineering and nanotechnology are being applied to environmental science, medicine, and engineering.

Nanotechnology [DVD]. 30 min. Discovery School, 2006.

Nanotechnology is the science of building electronic circuits and devices from single atoms and molecules. This program explores a digital camera that gives doctors the up-close and personal view of their patients' intestines. Learn about tiny computers in electronic devices that will help run households and businesses in the near future. And zoom into the world of nanotechnology to take a close look at atoms. Correlations to national education standards are included. Intended for grades 6-12.

When Things Get Small [DVD]. 28 min. Not Too Serious Labs, 2003.

What could a stadium-sized bowl of peanuts, a shrinking elephant, and a crazed hockey player have to do with nanoscience? Those are just a few of the goofy excursions that await you when witty host Adam Smith and wacky physicist Ivan Schuller take you on an irreverent, madcap, comically corny romp into the real-life quest to create the smallest magnet ever known.