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Best Sellers - 1983

The Boy Who Played with Fusion - Tom Clynes 2015-06-09

This story of a child prodigy and his unique upbringing is “an engrossing journey to the outer realms of science and parenting” (Paul Greenberg, author of *Four Fish*). A PEN/E. O. Wilson Literary Science Writing Award Finalist Like many young children, Taylor Wilson dreamed of becoming an astronaut. Only Wilson mastered the science of rocket propulsion by the age of nine. When he was eleven, he tried to cure his grandmother’s cancer—and discovered new ways to produce medical isotopes. Then, at fourteen, Wilson became the youngest person in history to achieve nuclear fusion, building a 500-million-degree reactor—in his parents’ garage. In *The Boy Who Played with Fusion*, science journalist Tom Clynes narrates Wilson’s extraordinary story. Born in Texarkana, Arkansas, Wilson quickly displayed an advanced intellect. Recognizing their son’s abilities and the limitations of their local schools, his parents

took a bold leap and moved the family to Reno, Nevada. There, Wilson could attend a unique public high school created specifically for academic superstars. Wilson is now designing devices to prevent terrorists from shipping radioactive material and inspiring a new generation to take on the challenges of science. If you’re wondering how someone so young can achieve so much, *The Boy Who Played with Fusion* has the answer. Along the way, Clynes’ narrative teaches parents, teachers, and society how and why we urgently need to support high-achieving kids. “An essential contribution to our understanding of the most important underlying questions about the development of giftedness, talent, creativity, and intelligence.” —*Psychology Today* “A compelling study of the thrills—and burdens—of being born with an alpha intellect.” —*Financial Times*

Radiation - Robert Peter Gale 2013-01-29

A forefront radiation expert who consulted during the Chernobyl and Fukushima crises and the author of *The Mold in Dr. Florey's Coat* identify the radioactive fundamentals of the

planet while correcting myths to reveal the role of radiation in everyday life and what should and should not raise concern.

Nuclear Energy - Marcia Amidon Lusted
2013-01-01

As our world's population grows, so does our need for energy. Scientists seek the next breakthrough in new technology while constantly finding ways to make current solutions cheaper and more efficient. In this title, discover what nuclear energy is, its history, how we use it today, and how new technologies can contribute to our energy future. Learn how researchers are working to solve nuclear energy's problems, including radiation dangers, handling nuclear waste, and making new plants more efficient, cheaper, smaller, and safer. Sidebars, full-color photos, full-spread diagrams, well-placed graphs, charts, and maps, stories highlighting innovations in action, and a glossary enhance this engaging title. Aligned to Common Core Standards and correlated to state standards. Essential Library is an imprint of Abdo Publishing, a division of ABDO.

Bomb - Steve Sheinkin 2012-09-04

In December of 1938, a chemist in a German laboratory made a shocking discovery: When placed next to radioactive material, a Uranium atom split in two. That simple discovery launched a scientific race that spanned 3 continents. In Great Britain and the United States, Soviet spies worked their way into the scientific community; in Norway, a commando force slipped behind enemy lines to attack German heavy-water manufacturing; and deep in the desert, one brilliant group of scientists was hidden away at a remote site at Los Alamos. This is the story of the plotting, the risk-taking, the deceit, and genius that created the world's most formidable weapon. This is the story of the atomic bomb. *Bomb* is a 2012 National Book Awards finalist for Young People's Literature. *Bomb* is a 2012 Washington Post Best Kids Books of the Year title. *Bomb* is a 2013 Newbery Honor book.

Midnight in Chernobyl - Adam Higginbotham
2020-02-04

A New York Times Best Book of the Year A Time Best Book of the Year A Kirkus Reviews Best Nonfiction Book of the Year 2020 Andrew Carnegie Medals for Excellence Winner From

journalist Adam Higginbotham, the New York Times bestselling "account that reads almost like the script for a movie" (The Wall Street Journal)—a powerful investigation into Chernobyl and how propaganda, secrecy, and myth have obscured the true story of one of the history's worst nuclear disasters. Early in the morning of April 26, 1986, Reactor Number Four of the Chernobyl Atomic Energy Station exploded, triggering one of the twentieth century's greatest disasters. In the thirty years since then, Chernobyl has become lodged in the collective nightmares of the world: shorthand for the spectral horrors of radiation poisoning, for a dangerous technology slipping its leash, for ecological fragility, and for what can happen when a dishonest and careless state endangers its citizens and the entire world. But the real story of the accident, clouded from the beginning by secrecy, propaganda, and misinformation, has long remained in dispute. Drawing on hundreds of hours of interviews conducted over the course of more than ten years, as well as letters, unpublished memoirs, and documents from recently-declassified archives, Adam Higginbotham brings the disaster to life through the eyes of the men and women who witnessed it firsthand. The result is a "riveting, deeply reported reconstruction" (Los Angeles Times) and a definitive account of an event that changed history: a story that is more complex, more human, and more terrifying than the Soviet myth. "The most complete and compelling history yet" (The Christian Science Monitor), Higginbotham's "superb, enthralling, and necessarily terrifying...extraordinary" (The New York Times) book is an indelible portrait of the lessons learned when mankind seeks to bend the natural world to his will—lessons which, in the face of climate change and other threats, remain not just vital but necessary.

The Making of the Atomic Bomb - Richard Rhodes 1988

Plasma Physics and Fusion Energy - Jeffrey P. Freidberg 2008-07-10

There has been an increase in interest worldwide in fusion research over the last decade and a half due to the recognition that a large number of new, environmentally attractive, sustainable energy sources will be needed to

meet ever increasing demand for electrical energy. Based on a series of course notes from graduate courses in plasma physics and fusion energy at MIT, the text begins with an overview of world energy needs, current methods of energy generation, and the potential role that fusion may play in the future. It covers energy issues such as the production of fusion power, power balance, the design of a simple fusion reactor and the basic plasma physics issues faced by the developers of fusion power. This book is suitable for graduate students and researchers working in applied physics and nuclear engineering. A large number of problems accumulated over two decades of teaching are included to aid understanding.

Physical Sciences - Kyle Kirkland 2010

Investigates the research and discoveries of scientists who explored the frontiers of physics and uncovered phenomena that often contradicted prevailing wisdom.

Bulletin of the Atomic Scientists - 1970-06

The Bulletin of the Atomic Scientists is the premier public resource on scientific and technological developments that impact global security. Founded by Manhattan Project Scientists, the Bulletin's iconic "Doomsday Clock" stimulates solutions for a safer world.

Nuclear Fusion and Fission - Fiona Young-Brown 2016-07-15

Nuclear Fusion and Fission delves into nuclear physics and the scientists responsible for the discovery of splitting and fusing an atom. The book begins with the very basic building blocks of science, breaking down the different types of energy and how we use them, the materials that make up an atom, and our search for the perfect renewable energy source. Set against the cultural backdrop of World War II, later chapters follow each significant theory that led to the creation of the world's most dangerous weapon as well as some of its most widely used medical and food production processes today.

Atomic Awakening: A New Look at the History and Future of Nuclear Power - James Mahaffey 2010-10-15

"Persuasive and based on deep research. Atomic Awakening taught me a great deal."—Nature
The American public's introduction to nuclear technology was manifested in destruction and death. With Hiroshima and the Cold War still

ringing in our ears, our perception of all things nuclear is seen through the lens of weapons development. Nuclear power is full of mind-bending theories, deep secrets, and the misdirection of public consciousness, some deliberate, some accidental. The result of this fixation on bombs and fallout is that the development of a non-polluting, renewable energy source stands frozen in time. Outlining nuclear energy's discovery and applications throughout history, Mahaffey's brilliant and accessible book is essential to understanding the astounding phenomenon of nuclear power in an age where renewable energy and climate change have become the defining concerns of the twenty-first century.

Sun in a Bottle - Charles Seife 2008

Chronicles the last half century's haphazard attempt to harness fusion energy, describing how governments and research teams throughout the world have employed measures ranging from the controversial to the humorous.

Wonders of Nuclear Fusion - Neal Singer 2011

Provides a comprehensive overview of nuclear fusion, focusing on its applications as a viable form of energy and discussing how scientists have approached and developed fusion.

The Future Of Fusion Energy - Jason Parisi 2019-01-02

'The text provides an interesting history of previous and anticipated accomplishments, ending with a chapter on the relationship of fusion power to nuclear weaponry. They conclude on an optimistic note, well worth being understood by the general public.' CHOICE
The gap between the state of fusion energy research and public understanding is vast. In an entertaining and engaging narrative, this popular science book gives readers the basic tools to understand how fusion works, its potential, and contemporary research problems. Written by two young researchers in the field, The Future of Fusion Energy explains how physical laws and the Earth's energy resources motivate the current fusion program — a program that is approaching a critical point. The world's largest science project and biggest ever fusion reactor, ITER, is nearing completion. Its success could trigger a worldwide race to build a power plant, but failure could delay fusion by decades. To these ends, this book

details how ITER's results could be used to design an economically competitive power plant as well as some of the many alternative fusion concepts.

A Place of Wonder - Chase Adonai Trudeau (CAT) 2022-06-24

Many people I have loved and who are no longer on this earth, and many people I still love, believe that a scientific way of thinking has removed the mysteries that led less educated people to believe in a god. They think the scientific advances demonstrate superior scientific thinking that has led to the erosion of the foundations of faith, an erosion that no longer supports rational faith. If someone you love thinks along these lines, this book may be for them.

An Indispensable Truth - Francis Chen 2011-04-11

Recent books have raised the public consciousness about the dangers of global warming and climate change. This book is intended to convey the message that there is a solution. The solution is the rapid development of hydrogen fusion energy. This energy source is inexhaustible and, although achieving fusion energy is difficult, the progress made in the past two decades has been remarkable. The physics issues are now understood well enough that serious engineering can begin. The book starts with a summary of climate change and energy sources, trying to give a concise, clear, impartial picture of the facts, separate from conjecture and sensationalism. Controlled fusion -- the difficult problems and ingenious solutions -- is then explained using many new concepts. The bottom line -- what has yet to be done, how long it will take, and how much it will cost -- may surprise you. Francis F. Chen's career in plasma has extended over five decades. His textbook *Introduction to Plasma Physics* has been used worldwide continuously since 1974. He is the only physicist who has published significantly in both experiment and theory and on both magnetic fusion and laser fusion. As an outdoorsman and runner, he is deeply concerned about the environment. Currently he enjoys bird photography and is a member of the Audubon Society.

Nuclear Fusion - Sharon Ann Holgate 2022-09-01

'What is nuclear fusion? In clear and accessible language, this book explains the basics and the hope for the future. A valuable addition to the Hot Science series.' - JOHN GRIBBIN Could the Sun hold the key to a future of clean energy? Since the 1950s, scientists have attempted to harness nuclear fusion - the process that creates the Sun's energy - to generate near-limitless amounts of electricity. But the fact that we still have no fusion power plants is testament to the complexities of the challenge. Now, the deepening climate crisis means that researchers around the world are in a race to create a mini-Sun here on Earth. The glittering prize is an energy source that emits no greenhouse gases and could solve energy equity and supply issues at a stroke. Sharon Ann Holgate, a former Young Professional Physicist of the Year, tells the compelling story of the ongoing scientific quest for a revolutionary new era of green energy production.

The Man from the Future: The Visionary Ideas of John von Neumann - Ananyo Bhattacharya 2022-02-22

An electrifying biography of one of the most extraordinary scientists of the twentieth century and the world he made. The smartphones in our pockets and computers like brains. The vagaries of game theory and evolutionary biology. Nuclear weapons and self-replicating spacecrafts. All bear the fingerprints of one remarkable, yet largely overlooked, man: John von Neumann. Born in Budapest at the turn of the century, von Neumann is one of the most influential scientists to have ever lived. A child prodigy, he mastered calculus by the age of eight, and in high school made lasting contributions to mathematics. In Germany, where he helped lay the foundations of quantum mechanics, and later at Princeton, von Neumann's colleagues believed he had the fastest brain on the planet—bar none. He was instrumental in the Manhattan Project and the design of the atom bomb; he helped formulate the bedrock of Cold War geopolitics and modern economic theory; he created the first ever programmable digital computer; he prophesied the potential of nanotechnology; and, from his deathbed, he expounded on the limits of brains and computers—and how they might be overcome. Taking us on an astonishing journey,

Ananyo Bhattacharya explores how a combination of genius and unique historical circumstance allowed a single man to sweep through a stunningly diverse array of fields, sparking revolutions wherever he went. *The Man from the Future* is an insightful and thrilling intellectual biography of the visionary thinker who shaped our century.

Wonder Women and Bad Girls - Valerie Estelle Frankel 2020-10-12

Wonder Woman, Harley Quinn, Shuri, and Black Widow. These four characters portray very different versions of women: the superheroine, the abuse victim, the fourth wave princess, and the spy, respectively. In this in-depth analysis of female characters in superhero media, the author begins by identifying ten eras of superhero media defined by the way they portray women. Following this, the various archetypes of superheroines are classified into four categories: boundary crossers, good girls, outcasts, and those that reclaim power. From Golden Age comics through today's hottest films, heroines have been surprisingly assertive, diverse, and remarkable in this celebration of all the archetypes.

Plasma Physics for Nuclear Fusion - Kenrō Miyamoto 1980

This book focuses on the properties of gaseous plasmas needed to attain controlled fusion reactions. Designed as a text for graduated and senior undergraduate students beginning the study of plasma physics as it relates to controlled nuclear fusion, the book should play a significant role in preparing a new generation of scientists and engineers to enter the important field of nuclear fusion research. It will also serve as a basic and exhaustive reference for professionals already involved in the field. The book consists of sixteen chapters, grouped into four major subject areas. The first five chapters develop the fundamentals of plasma physics and present the conditions of nuclear fusion reactions. The next four provide a magnetohydrodynamic description of plasmas, followed by four chapters that provide an explanation of wave phenomena and instabilities by means of a kinetic model. The three final chapters take up the problems of heating, diagnostics, and confinement. Some of the specific topics introduced are the Lawson

condition, Boltzmann and Vlasov equations; plasma equilibrium; magnetohydrodynamic instabilities; waves in cold and hot plasmas; microinstabilities; fast neutral beam injection and wave heating; diagnostics employing microwaves, lasers, and energy analyzers. Plasma confinement in tokamaks and stellarators, multipole fields, mirrors, and cusps, as well as inertial confinement, are reviewed. References follow each chapter. There are four appendixes and an index.

Arsenals of Folly - Richard Rhodes 2008-11-04
Pulitzer Prize-winning author Richard Rhodes delivers a riveting account of the nuclear arms race and the Cold War. In the Reagan-Gorbachev era, the United States and the Soviet Union came within minutes of nuclear war, until Gorbachev boldly launched a campaign to eliminate nuclear weapons, setting the stage for the 1986 Reykjavik summit and the incredible events that followed. In this thrilling, authoritative narrative, Richard Rhodes draws on personal interviews with both Soviet and U.S. participants and a wealth of new documentation to unravel the compelling, shocking story behind this monumental time in human history—its beginnings, its nearly chilling consequences, and its effects on global politics today.

Search for the Ultimate Energy Source - Stephen O. Dean 2013-01-05

Why has the clean, limitless energy promised by fusion always seemed just out of reach? *Search for the Ultimate Energy Source: A History of the U.S. Fusion Energy Program*, explains the fundamentals and concepts behind fusion power, and traces the development of fusion historically by decade—covering its history as dictated by US government policies, its major successes, and its prognosis for the future. The reader will gain an understanding of how the development of fusion has been shaped by changing government priorities as well as other hurdles currently facing realization of fusion power. Advance Praise for *Search for the Ultimate Energy Source*: “Dr. Dean has been uniquely involved in world fusion research for decades and, in this book, describes the complicated realities like few others possibly could.” -Robert L. Hirsch, a former director of the US fusion program, an Assistant Administrator of the US Energy Research and Development

Administration (ERDA); an executive at Exxon, Arco, and the Electric Power Research Institute (EPRI); and lead author of the book *The Impending World Energy Mess* (Apogee Prime Books, 2009). "In this book, Dr. Dean provides the many reasons why fusion has progressed more slowly than many had hoped. Budget is usually cited as the culprit, but policy is equally to blame. Facilities have been closed down before their jobs were done—or in some cases, even started. It seems this situation has become endemic in fusion, and if one thinks about it, in other nationally important Science and Technology initiatives as well." -William R. Ellis, a former scientist at Los Alamos National Laboratory, Associate Director of Research at the US Naval Research Laboratory, a vice president at Ebasco Services and at Raytheon, and chair of the US ITER Industry Council and the US ITER Industrial Consortium.

Nuclear Fusion - C.M. Braams 2002-06-20
Fusion research started over half a century ago. Although the task remains unfinished, the end of the road could be in sight if society makes the right decisions. *Nuclear Fusion: Half a Century of Magnetic Confinement Fusion Research* is a careful, scholarly account of the course of fusion energy research over the past fifty years. The authors outline the different paths followed by fusion research from initial ignorance to present understanding. They explore why a particular scheme would not work and why it was more profitable to concentrate on the mainstream tokamak development. The book features descriptive sections, in-depth explanations of certain physical and technical issues, scientific terms, and an extensive glossary that explains relevant abbreviations and acronyms.

The Wonder Of Brian Cox - The Unauthorised Biography Of The Man Who Brought Science To The Nation - Ben Falk 2012-06-29

Professor Brian Cox is probably the best-known physicist in the world today. As presenter of the hit television series *Wonders of the Solar System* and *Wonders of the Universe*, his affable charm and infectious enthusiasm has brought science to a whole new audience. Born in Lancashire in 1968, Cox was a bright, but not brilliant pupil at school - only receiving a D grade for A level mathematics. He flourished at university,

however, gaining a first-class honours degree and an MPhil in Physics from Manchester University before being awarded his PhD in particle physics in 1998. Alongside his studies he also found time to play keyboards for the band D:Ream, and the band topped the charts in 1994 with 'Things Can Only Get Better', which was famously used by the Labour Party for its 1997 election campaign. Although he has appeared in several television shows, Brian Cox is not just a celebrity presenter - he is a Royal Society University Research Fellow, a professor at the University of Manchester, and he also works on the ATLAS experiment at the Large Hadron Collider at CERN in Switzerland. In 2010 he was awarded an OBE for his services to science, and he has also won several awards for his television work.

Philosophy in the Elements - Garrison Clifford Gibson 2013-03-14

During the course of two years living outdoors in Alaska Garrison Clifford Gibson wrote philosophical essays on cosmology and Christianity considering how spirit and the Universe are reconciled with reason. The author's interests reading popular cosmology, the Bible, philosophy and history yielded construction of a synthesis of logic, epistemology, philosophy of language and the gospel into a world view examining transcendence of mass and energy through the Spirit.

Sid Meier's Civilization - Johnny L. Wilson 1992

The Grand Energy Transition - Robert A. Hefner, III 2009-09-08

A groundbreaking book on solving our growing energy problems In this visionary book, leading energy industry executive Robert Hefner puts forth a convincing case about how the world can move beyond its current dependence on oil and toward a new era of clean, renewable energy. Written with the knowledge and authority of a major player in this industry, Hefner relates how misguided government policies and vested industry interests have contributed to our current energy problems and proposes a variety of measures that could encourage the use of natural gas, solar, wind, and hydrogen. Convincingly makes the case that natural gas is

the essential bridge fuel to a new era of clean, renewable energy sources Details how natural gas can help break our oil and coal dependency Offers a sweeping, historic picture of the world energy situation Presents a compelling and provocative case that natural gas is key to our short-term energy problems A well-written and engaging book that mixes personal anecdotes and experiences with insightful analysis, The Grand Energy Transition is a powerful argument about how we can best solve our toughest energy problems.

Forum for Applied Research and Public Policy - 1992

Japan Economic Almanac - 1990

Introduction to Plasma Physics and Controlled Fusion - Francis F. Chen
2013-03-09

TO THE SECOND EDITION In the nine years since this book was first written, rapid progress has been made scientifically in nuclear fusion, space physics, and nonlinear plasma theory. At the same time, the energy shortage on the one hand and the exploration of Jupiter and Saturn on the other have increased the national awareness of the important applications of plasma physics to energy production and to the understanding of our space environment. In magnetic confinement fusion, this period has seen the attainment 13 of a Lawson number nTE of $2 \times 10^{21} \text{ cm}^{-3} \text{ sec}$ in the Alcator tokamaks at MIT; neutral-beam heating of the PL T tokamak at Princeton to $KTi = 6.5$ keV; increase of average β to 3%-5% in tokamaks at Oak Ridge and General Atomic; and the stabilization of mirror-confined plasmas at Livermore, together with injection of ion current to near field-reversal conditions in the 2XII β device. Invention of the tandem mirror has given magnetic confinement a new and exciting dimension. New ideas have emerged, such as the compact torus, surface-field devices, and the E β T mirror-torus hybrid, and some old ideas, such as the stellarator and the reversed-field pinch, have been revived. Radiofrequency heating has become a new star with its promise of dc current drive. Perhaps most importantly, great progress has been made in the understanding of the MHD behavior of toroidal plasmas: tearing

modes, magnetic VII VIII islands, and disruptions.

A Piece of the Sun - Daniel Clery 2014-07-29
The solution, says Daniel Clery in this deeply revelatory book, is to be found in the original energy source: the Sun itself. There, at its center, the fusion of 620 million tons of hydrogen every second generates an unfathomable amount of energy. By replicating even a tiny piece of the Sun's power on Earth, we can secure all the heat and energy we would ever need. The simple yet extraordinary ambition of nuclear-fusion scientists has garnered many skeptics, but, as A Piece of the Sun makes clear, large-scale nuclear fusion is scientifically possible—and perhaps even preferable to other options. Clery argues passionately and eloquently that the only thing keeping us from harnessing this cheap, clean and renewable energy is our own shortsightedness.

Can a Scientist Believe in Miracles? - Ian Hutchinson 2018-09-11

Plasma physicist Ian Hutchinson has been asked hundreds of questions about faith and science. Is God's existence a scientific question? Is the Bible consistent with the modern scientific understanding of the universe? Are there scientific reasons to believe in God? In this comprehensive volume, Hutchinson answers a full range of inquiries with sound scientific insights and measured Christian perspective.

ITER: The Giant Fusion Reactor - Michel Claessens 2019-10-17

This book provides for the first time an insider's view into ITER, the biggest fusion reactor in the world, which is currently being constructed in southern France. Aimed at bringing the "energy of the stars" to earth, ITER is funded by the major economic powers (China, the EU, India, Japan, Korea, Russia and the US). Often presented as a "nuclear but green" energy source, fusion could play an important role in the future electricity supply. But as delays accumulate and budgets continue to grow, ITER is currently a star partially obscured by clouds. Will ITER save humanity by providing a clean, safe and limitless source of energy, or is it merely a political showcase of cutting-edge technology? Is ITER merely an ambitious research project and partly a PR initiative driven by some politically connected scientists? In any

case, ITER has already helped spur on rival projects in the US, Canada and the UK. This book offers readers a behind-the-scenes look at this controversial project, which France snatched from Japan, and introduces them to a world of superlatives: with the largest magnets in the world, the biggest cryogenic plant and tremendous computing power, ITER is one of the most fascinating, and most international, scientific and technological endeavours of our time.

The First Nuclear Era - Alvin M. Weinberg 1994

The autobiography of a highly influential nuclear engineer and scientist whose work began in the 1940s and continues today. He recounts his education, his role in the Manhattan Project, his stint as director of the Oak Ridge National Laboratory (1955- 73), and his subsequent work with both successful and unsuccessful commercial power reactors. Annotation copyright by Book News, Inc., Portland, OR

Nuclear Fusion - Keishiro Niu 1989-06-29

Nuclear Fusion describes the state and ultimate goals of nuclear fusion research. The book concentrates on the energy problem in the near future, the role of nuclear fusion reactions for a solution of the energy problem, the requirements for releasing fusion energy and the methods likely to lead to fusion reactions. The book is organised into four sections. In turn these cover the fundamentals of nuclear fusion, methods of magnetic confinement, methods of inertial confinement and the fusion reactor itself. The book has a strong theoretical content, covering those areas of plasma physics which are necessary for an understanding of the confinement problem. This book was first published in Japanese. This edition in English has been thoroughly revised by Keishiro Niu.

Cold Fusion - Jean-Paul Biberian 2020-01-17

Cold Fusion: Advances in Condensed Matter Nuclear Science provides a concise description of the existing technological approaches in cold fusion or low energy nuclear reaction engineering. It handles the chemistry, physics, materials, and various processes involved in cold fusion, and provides a critical analysis of obtained theoretical and experimental results. The book has a very international appeal with the editor from France and an international pool of chapter authors from academia and industry.

This book is an indispensable resource for researchers in academia and industry connected with combustion processes and synthesis all over the world. Systemizes the rapidly growing amount of information in cold fusion or low energy nuclear reaction technologies Defines the scientific fundamentals for understanding of cold fusion engineering Provides an overview of the history of the development of cold fusion engineering Written by an international pool of chapter authors

Nuclear Power - David Elliott 2017-05-02

This book looks at the early history of nuclear power, at what happened next, and at its longer-term prospects. The main question is: can nuclear power overcome the problems that have emerged? It was once touted as the ultimate energy source, freeing mankind from reliance on dirty, expensive fossil energy. Sixty years on, nuclear only supplies around 11.5% of global energy and is being challenged by cheaper energy options. While the costs of renewable sources, like wind and solar, are falling rapidly, nuclear costs have remained stubbornly high. Its development has also been slowed by a range of other problems, including a spate of major accidents, security concerns and the as yet unresolved issue of what to do with the wastes that it produces. In response, a new generation of nuclear reactors is being developed, many of them actually revised versions of the ideas first looked at in the earlier phase. Will this new generation of reactors bring nuclear energy to the forefront of energy production in the future?

Star Power - Alain Bécoulet 2022-03-01

A concise and accessible explanation of the science and technology behind the domestication of nuclear fusion energy. Nuclear fusion research tells us that the Sun uses one gram of hydrogen to make as much energy as can be obtained by burning eight tons of petroleum. If nuclear fusion—the process that makes the stars shine—could be domesticated for commercial energy production, the world would gain an inexhaustible source of energy that neither depletes natural resources nor produces greenhouse gases. In *Star Power*, Alan Bécoulet offers a concise and accessible primer on fusion energy, explaining the science and technology of nuclear fusion and describing the massive international scientific effort to achieve

commercially viable fusion energy. Bécoulet draws on his work as Head of Engineering at ITER (International Thermonuclear Experimental Reactor) to explain how scientists are trying to “put the sun in a box.” He surveys the history of nuclear power, beginning with post-World War II efforts to use atoms for peaceful purposes and describes how energy is derived from fusion, explaining that the essential principle of fusion is based on the capacity of nucleons (protons and neutrons) to assemble and form structures (atomic nuclei) in spite of electrical repulsion between protons, which all have a positive charge. He traces the evolution of fusion research and development, mapping the generation of electric current through fusion. The ITER project marks a giant step in the development of fusion energy, with the potential to demonstrate the feasibility of a nuclear fusion reactor. *Star Power* offers an introduction to what may be the future of energy production.

Separation Anxiety - Laura Zigman 2020-03-03

“Separation Anxiety is a hilarious, heart-breaking and thought-provoking portrait of a difficult marriage, as fierce as it is funny.... My advice: Start reading and don’t stop until you get to the last page of this wise and wonderful novel.” —Alice Hoffman AN ANTICIPATED BOOK FROM: Entertainment Weekly * Cosmopolitan * USA Today * Real Simple * Parade * Buzzfeed * Glamour * PopSugar From bestselling author Laura Zigman, a hilarious

novel about a wife and mother whose life is unraveling and the well-intentioned but increasingly disastrous steps she takes to course-correct her relationships, her career, and her belief in herself. Judy never intended to start wearing the dog. But when she stumbled across her son Teddy’s old baby sling during a halfhearted basement cleaning, something in her snapped. So: the dog went into the sling, Judy felt connected to another living being, and she’s repeated the process every day since. Life hasn’t gone according to Judy’s plan. Her career as a children’s book author offered a glimpse of success before taking an embarrassing nose dive. Teddy, now a teenager, treats her with some combination of mortification and indifference. Her best friend is dying. And her husband, Gary, has become a pot-addled professional “snackologist” who she can’t afford to divorce. On top of it all, she has a painfully ironic job writing articles for a self-help website—a poor fit for someone seemingly incapable of helping herself. Wickedly funny and surprisingly tender, *Separation Anxiety* offers a frank portrait of middle-aged limbo, examining the ebb and flow of life’s most important relationships. Tapping into the insecurities and anxieties that most of us keep under wraps, and with a voice that is at once gleefully irreverent and genuinely touching, Laura Zigman has crafted a new classic for anyone taking fumbling steps toward happiness.