The Infancy Of Atomic Physics Hercules In His Cradle

The Infancy of Atomic Physics-Alex Keller 2013-10-09 This compelling history portrays the human faces and lives behind the beginnings of atomic science, from experiments in the 1880s to the era just after the First World War.

The infancy of atomic physics-Alex Keller 1981

The Infancy of atomic physics: Hercules in his cradle-Alex Keller 1984

Atomic Physics-D.C.G Jones 2018-05-03 Using the quantum approach to the subject of atomic physics, this text keeps the mathematics to the minimum needed for a clear and comprehensive understanding of the material. Beginning with an introduction and treatment of atomic structure, the book goes on to deal with quantum mechanics, atomic spectra and the theory of interaction between atoms and radiation. Continuing to more complex atoms and atomic structure in general, the book concludes with a treatment of quantum optics. Appendices deal with Rutherford scattering, calculation of spin-orbit energy, derivation of the Einstein B coefficient, the Pauli Exclusion Principle and the derivation of eigenstates in helium. The book should be of interest to undergraduate physics students at intermediate and advanced level and also to those on materials science and chemistry courses.

Atomic Age America-Martin V. Melosi 2016-09-13 Atomic Age America looks at the broad influence of atomic energy—focusing particularly on nuclear weapons and nuclear power—on the lives of Americans within a world context. The text examines the social, political, diplomatic, environmental, and technical impacts of atomic energy on the 20th and 21st centuries, with a look back to the origins of atomic theory.

Niels Bohr and the Quantum Atom-Helge Kragh 2012-05-03 Niels Bohr and the Quantum Atom gives a comprehensive account of the birth, development, and decline of Bohr's atomic theory. It presents the theory in a broad context which includes not only its technical aspects, but also its reception, dissemination, and applications in both physics and chemistry.

The Supersymmetric Dirac Equation-Allen Hirshfeld 2012 The solution of the Dirac equation for an electron in a Coulomb field is systematically treated here by utilizing new insights provided by supersymmetry. It is shown that each of the concepts has its analogue in the non-relativistic case. Indeed, the non-relativistic case is developed first, in order to introduce the new concepts in a familiar context. The symmetry of the non-relativistic model is already present in the classical limit, so the classical Kepler problem is first discussed in order to bring out the role played by the Laplace vector, one of the central concepts of the whole book. Analysis of the concept of eccentricity of the orbits turns out to be essential to understanding the relation of the classical and quantum mechanical models. The opportunity is taken to relive the great moments of physics: From Kepler's discovery of the laws of motion of the planets the development is traced through the Dirac equation up to modern advances, which bring the concepts of supersymmetry to bear on the derivation of the solutions.

Atomic Physics 4-G. Putlitz 2012-12-06 ATOMIC PHYSICS 4 extends the series of books containing the invited papers presented at each "International Conference on Atomic Physics." FICAP, the fourth conference of this type since its foundation in 1968, was held at the University of Heidelberg. The goal of these conferences, to cover the field of atomic physics with all its different branches, to review the present status of research, to revive the fundamental basis of atomic physics and to emphasize future developments of this field as well as its applications was met by more than thirty invited speakers, leaders in the field of atomic physics. Their talks were supplemented by more than two hundred contributed papers contained in the FICAP Book of Abstracts. This volume begins with papers given in honour and memory of E. U. Condon, to whom this conference was dedicated. It continues with articles on fundamental interactions in atoms and Quantum electrodynamics, on the fast progressing field of high energy heavy ion collisions and Quasi-molecules, on electronic and atomic collisions and the structure of electronic and ~mesic atoms. The volume closes with contributions...
concerning the application of lasers in atomic physics, a new field of vastly increasing importance to fundamental experiments as well as applications. We feel that this book contains a very stimulating account of the present mainstreams of research in atomic physics and its possible future directions.

Classical Dynamical Systems - Walter Thirring 2013-12-01

The Neutron's Children - Sean Johnston 2012-04-26 This account tracks the Allied atomic energy experts who emerged from the Manhattan Project to explore optimistic but distinct paths in the USA, UK and Canada. Characterized successively as admired atomic scientists, mistrusted spies and heroic engineers, their identities were ultimately shaped by nuclear accidents.

A Course in Mathematical Physics 1 and 2 - Walter Thirring 2012-12-06 The last decade has seen a considerable renaissance in the realm of classical dynamical systems, and many things that may have appeared mathematically overly sophisticated at the time of the first appearance of this textbook have since become the everyday tools of working physicists. This new edition is intended to take this development into account. I have also tried to make the book more readable and to eradicate errors. Since the first edition already contained plenty of material for a one semester course, new material was added only when some of the original could be dropped or simplified. Even so, it was necessary to expand the chapter with the proof of the K-A-M Theorem to make allowances for the current trend in physics. This involved not only the use of more refined mathematical tools, but also a reevaluation of the word "fundamental." What was earlier dismissed as a grubby calculation is now seen as the consequence of a deep principle. Even Kepler's laws, which determine the radii of the planetary orbits, and which used to be passed over in silence as mystical nonsense, seem to point the way to a truth unattainable by superficial observation: The ratios of the radii of Platonic solids to the radii of inscribed Platonic solids are irrational, but satisfy algebraic equations of lower order.

Classical Mathematical Physics - Walter Thirring 2013-12-01 This book combines the enlarged and corrected editions of both volumes on classical physics stemming from Thirring's famous course. The treatment of classical dynamical systems uses analysis on manifolds to provide the mathematical setting for discussions of Hamiltonian systems, canonical transformations, constants of motion, and perturbation theory. Problems discussed include: nonrelativistic motion of particles and systems, relativistic motion in electromagnetic and gravitational fields, and the structure of black holes. The treatment of classical fields uses the language of differential geometry, treating both Maxwell's and Einstein's equations in a compact and clear fashion. The book includes discussions of the electromagnetic field due to known charge distributions and in the presence of conductors, as well as a new section on gauge theories. It discusses the solutions of the Einstein equations for maximally symmetric spaces and spaces with maximally symmetric submanifolds, and concludes by applying these results to the life and death of stars. Numerous examples and accompanying remarks make this an ideal textbook.

Interventions for Persisting Ductus Arteriosus in the Preterm Infant - Michael Obladen 2005 Over the past few years a remarkably rapid evolution in the professional level of neonatology and in the survival of immature infants has been witnessed. Persisting ductus arteriosus is common in this population and is associated with impaired longterm outcome. Many uncertainties exist concerning indication, approach, best time, and side effects of necessary measurements and interventions to avoid later neurodevelopmental handicaps of the survivors. Experts in neonatology and pediatric cardiology give their opinion in this book. We are sure it will help to define the level of evidence and to develop standards of intervention for persisting ductus arteriosus in Europe. Adequate dealing with the ductus will become a challenge for every perinatal center.

Rocket States: Atomic Weaponry and the Cultural Imagination - Fabienne Collignon 2014-07-31 Rocket States crosses the disciplines of Cold War Studies, American Literature, American Studies and Cultural Studies. The particular attraction of this study lies in the combination of its range-close textual and visual analysis of the correlations between land and weaponry, set firmly within its political and cultural contexts-with its unique analytical approach. The book offers a synthesis between history, theories of technology, theories of space, popular culture, literary study and military science. It illuminates a variety of literary texts from key writers and thinkers such as Pynchon, Stephen King, Norman Mailer, and Tom Wolfe, while also invoking figures like Nikola Tesla, James Webb, Batman and Ronald Reagan. Organised topographically, according to how missile technology manifests itself differently in particular locations, Rocket States's geographical targets are Colorado, Kansas, Cape Canaveral and New York, variously titled 'Excavation', 'Preservation', 'Evacuation' and 'Transmission'. It advances through these states roughly chronologically, beginning in the late 1940s and early 1950s and coming to an end in the first part of the 21st century. Collignon's argument is concerned with identifying the recurring figures and fantasies of the Cold War: the dome or parabola as sheltering techno-form; the fictions of total security adapting to constantly changing targeting strategies; gadget love; closed, freezing worlds. As such, Rocket States analyses by what processes the Cold War is frequently literalised in its weapons installations and how these facilities, in turn, shape dreams of containment, survival, escape, techno-supremacy.
Quantum Mechanics: What is wrong with it and how to fix it

Janeen Hunt 2007-01-01

This book contains much of the lost history of the development of quantum mechanics. The theory is controversial. This book explains why by going to the very foundations of Quantum Mechanics directly from the mouths of its inventors, the honored and famous scientists. It is a telling exposé and a serious but almost irreverent treatment of atomic science that tacitly suggests outright fraud, blind denial of facts, and overly enthusiastic adoption of slanted interpretations of data. Although written for those familiar with quantum mechanics, it is not written as a technical article, but informally for the educated reader. It is hard-hitting and controversial, but researched and well-referenced with over 200 quotations from 97 sources. Using historical quotations by the founders of QM, this book suggests that a different theory of the atom can be and should have been introduced without resorting to assumptions that defy evidence and deny rationality, but rather relying on existing empirical data.

Beam-Foil Spectroscopy

Ivan Sellin 2012-12-06

The appreciable evolution of the nearly teenaged branch of atomic and molecular physics called beam foil spectroscopy is clearly depicted in the present volumes, which are devoted to publication of presentations at the Fourth International Conference on Beam Foil Spectroscopy and Heavy Ion Atomic Physics Symposium. The transition from childhood to adolescence parallels human experience in that diffusion of interests and interactions beyond the confines of the original family has most certainly occurred. The pre-occupation with techniques and their development has been largely replaced by interest in the physics of the widest possible array of atomic and molecular physics experiments, in which spectroscopic study (visible, UV, XUV, X-ray, electron) of collisional interactions of fast beams is the unifying theme. The description “accelerator-based atomic physics” is perhaps more representative of the subject today than is the original, beam-foil spectroscopy,” since so many experiments have nothing to do with foils, and furthermore, employ spectroscopy mainly as an incidental tool. What, then distinguishes beam-foil spectroscopy from overlapping fields of atomic collisions physics? In an era where the boundaries are becoming ever more diffuse, there can be no clear definition. A good functional definition was recently conceived by Peter Erman, under the salubrious stimulus of a large Tennessee bourbon: it is the tribal experience of the community of scientists who have banded together to develop the discipline over the past dozen years, as shared at the triennial conferences devoted to it.

Drawing Physics

Don S. Lemons 2017-02-10

Drawings and short essays offer engaging and accessible explanations of key ideas in physics, from triangulation to relativity and beyond.

Strange Science

Lara Karpenko 2016-12-20

"With a foreword by Dame Gillian Beer"--Cover.

First Principles of Atomic Physics

Richard Franklin Humphreys 1950

Reader's Guide to the History of Science

Arne Hessenbruch 2013-12-16

The Reader's Guide to the History of Science looks at the literature of science in some 550 entries on individuals (Einstein), institutions and disciplines (Mathematics), general themes (Romantic Science) and central concepts (Paradigm and Fact). The history of science is construed widely to include the history of medicine and technology as is reflected in the range of disciplines from which the international team of 200 contributors are drawn.

Making Modern Science, Second Edition

Peter J. Bowler 2020-08-17

In this new edition of the top-selling coursebook, seasoned historians Peter J. Bowler and Iwan Rhys Morus expand on their authoritative survey of how the development of science has shaped our world. Exploring both the history of science and its influence on modern thought, the authors chronicle the major developments in scientific thinking, from the revolutionary ideas of the seventeenth century to contemporary issues in genetics, physics, and more. Thoroughly revised and expanded, the second edition draws on the latest research and scholarship. It also contains two entirely new chapters: one that explores the impact of computing on the development of science, and another that shows how the West used science and technology as tools for geopolitical expansion. Designed for entry-level college courses and as a single-volume introduction for the general reader, Making Modern Science presents the history of science not as a series of names and dates, but as an interconnected and complex web of relationships joining science and society.

Constructing Quantum Mechanics

Anthony Duncan 2019-08-29

Constructing Quantum Mechanics is the first of two volumes on the genesis of quantum mechanics. It covers the key developments in the period 1900-1923, which provided the scaffold on which the arch of modern quantum mechanics was built. This volume traces the early contributions by Planck, Einstein, and Bohr to the theories of black-body radiation, specific heats, and spectroscopy, all showing the need for drastic changes to the physics of their day. It examines the efforts by Sommerfeld and others to provide a new theory, now known as the old quantum theory. After some striking initial successes (explaining the fine structure of hydrogen, X-ray spectra, and the Stark effect), the old quantum theory ran into serious difficulties (failing to provide consistent models for helium and the Zeeman effect) and eventually gave way to matrix and wave mechanics. The book breaks new ground, both in its treatment of the work of Sommerfeld and his associates, and also in its offering of new perspectives on classic papers by Planck, Einstein, and Bohr. Throughout this volume, the authors provide detailed
reconstructions of the central arguments and derivations of the physicists involved, allowing for a full and thorough understanding of the key principles.

The Routledge Companion to Literature and Science-Bruce Clarke 2010-09-13 With forty-four newly commissioned articles from an international cast of leading scholars, The Routledge Companion to Literature and Science traces the network of connections among literature, science, technology, mathematics, and medicine. Divided into three main sections, this volume: links diverse literatures to scientific disciplines from Artificial Intelligence to Thermodynamics surveys current theoretical and disciplinary approaches from Animal Studies to Semiotics traces the history and culture of literature and science from Greece and Rome to Postmodernism. Ranging from classical origins and modern revolutions to current developments in cultural science studies and the posthumanities, this indispensible volume offers a comprehensive resource for undergraduates, postgraduates, and researchers. With authoritative, accessible, and succinct treatments of the sciences in their literary dimensions and cultural frameworks, here is the essential guide to this vibrant area of study.

100 Most Popular Scientists for Young Adults-Kendall F. Haven 1999 Biographical sketches of 100 twentieth-century scientists give information on career highlights, important contributions, key dates, and advice for young people considering careers in science.

Introduction to Elementary Particles-David Griffiths 2020-12-18 In the second, revised edition of a well-established textbook, the author strikes a balance between quantitative rigor and intuitive understanding, using a lively, informal style. The first chapter provides a detailed historical introduction to the subject, while subsequent chapters offer a quantitative presentation of the Standard Model. A simplified introduction to the Feynman rules, based on a “toy” model, helps readers learn the calculational techniques without the complications of spin. It is followed by accessible treatments of quantum electrodynamics, the strong and weak interactions, and gauge theories. New chapters address neutrino oscillations and prospects for physics beyond the Standard Model. The book contains a number of worked examples and many end-of-chapter problems. A complete solution manual is available for instructors.

Reader's Guide to British History-David Loades 2020-12-18 The Reader's Guide to British History is the essential source to secondary material on British history. This resource contains over 1,000 A-Z entries on the history of Britain, from ancient and Roman Britain to the present day. Each entry lists 6-12 of the best-known books on the subject, then discusses those works in an essay of 800 to 1,000 words prepared by an expert in the field. The essays provide advice on the range and depth of coverage as well as the emphasis and point of view espoused in each publication.

Operator Techniques in Atomic Spectroscopy-Brian R. Judd 2014-07-14 In the 1920s, when quantum mechanics was in its infancy, chemists and solid state physicists had little choice but to manipulate unwieldy equations to determine the properties of even the simplest molecules. When mathematicians turned their attention to the equations of quantum mechanics, they discovered that these could be expressed in terms of group theory, and from group theory it was a short step to operator methods. This important development lay largely dormant until this book was originally published in 1963. In this pathbreaking publication, Brian Judd made the operator techniques of mathematicians comprehensible to physicists and chemists. He extended the existing methods so that they could handle heavier, more complex molecules and calculate their energy levels, and from there, it was another short step to the mathematical analysis of spectra. This book provides a first-class introduction to continuous groups for physicists and chemists. Although first written from the perspective of atomic spectroscopy, its major topics and methods will appeal to anyone who has an interest in understanding particle theories of nuclear physics. Originally published in 1998. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

Nobel Laureates in Chemistry, 1901-1992-James K. Laylin 1993-10-30 Through new perspectives from a mix of original monographs, biographies, autobiographical memoirs, edited collections of essays and documentary sources, translations, classic reprints, and pictorial volumes, this series will document the individuals, ideas, institutions, and innovations that have created the modern chemical sciences.

Modern Alchemy-Mark Morrisson 2007-04-19 Alchemists are generally held to be the quirky forefathers of science, blending occultism with metaphysical pursuits. Although many were intelligent and well-intentioned thinkers, the oft-cited goals of alchemy paint these antiquated experiments as wizardry, not scientific investigation. Whether seeking to produce a miraculous panacea or struggling to transmute lead into gold, the alchemists radical goals held little relevance to consequent scientific pursuits. Thus, the temptation is to view the transition from alchemy to modern science
as one that discarded fantastic ideas about philosophers stones and magic potions in exchange for modest yet steady results. It has been less noted, however, that the birth of atomic science actually coincided with an efflorescence of occultism and esoteric religion that attached deep significance to questions about the nature of matter and energy. Mark Morrisson challenges the widespread dismissal of alchemy as a largely insignificant historical footnote to science by prying into the revival of alchemy and its influence on the emerging subatomic sciences of the late 19th and early 20th centuries. Morrisson demonstrates its surprising influence on the emerging subatomic sciences of the late 19th and early 20th centuries. Specifically, Morrisson examines the resurfacing of occult circles during this time period and how their interest in alchemical tropes had a substantial and traceable impact upon the science of the day. Modern Alchemy chronicles several encounters between occult conceptions of alchemy and the new science, describing how academic chemists, inspired by the alchemy revival, attempted to transmute the elements; to make gold. Examining scientists publications, correspondence, talks, and laboratory notebooks as well as the writings of occultists, alchemical tomes, and science-fiction stories, he argues that during the birth of modern nuclear physics, the trajectories of science and occultism—so often considered antithetical—briefly merged.

Half Lives—Lucy Jane Santos 2020-07-02 'Half Lives shines a light on the shocking history of the world's toxic love affair with a deadly substance, radium. Unnerving, fascinating, informative and truly frightening.' Hallie Rubenhold, author of The Five Live Jane Santos presents the surprising history of radium in everyday life. Of all the radioactive elements discovered at the end of the 19th century, it was radium that became the focus of both public fascination and entrepreneurial zeal. Half Lives tells the fascinating, curious, sometimes macabre story of the element through its ascendance as a desirable item—a present for a queen, a prize in a treasure hunt, a glow-in-the-dark dance costume—to its role as a supposed cure-all in everyday 20th-century life, when medical practitioners and business people (reputable and otherwise) devised ingenious ways of commodifying the new wonder element, and enthusiastic customers welcomed their radioactive wares into their homes. Historian Lucy Jane Santos—herself the proud owner of a formidable collection of radium beauty treatments—delves into the stories of these products and details the gradual downfall and discredit of the radium industry through the eyes of the people who bought, sold and eventually came to fear the once-fetishized substance. She reveals a new history of radium, one in which the stories of those previously dismissed as quacks and fools are brought to life, as part of a unique examination of the interplay between science and popular culture. 'In Half Lives, Lucy Santos transports us back to a time when consumers wondered whether mixing radium into chicken feed might result in eggs that could hard-boil themselves; when diners cheerfully drank radioactive cocktails that glowed in the dark; and when people used toothpaste containing lethal thorium oxide in the pursuit of healthy gums. Santos unpicks fact from fiction and exhibits a masterful grasp of a complex area of science history that is so often mistold. Half Lives is a delightfully disturbing book that reminds us all of the age-old Latin maxim, 'caveat emptor.' Dr Lindsey Fitzharris, bestselling author of The Butchering Art With verve and vivacity, Lucy Jane Santos conducts her readers on a unique tour of the twentieth century's most significant scientific discovery. Before the R-word threatened destruction, it offered hope for the future - teeth would glow white, cocktails would shine in the dark and cancer would be vanquished. This evocative account puts people and their emotions centre-stage of science's past.' Dr Patricia Fara

Curie—Sarah Dry 2003 Curie was not only the first woman to win a Nobel Prize she won it twice

Making Modern Science—Peter J. Bowler 2010-02-24 The development of science, according to respected scholars Peter J. Bowler and Iwan Rhys Morus, expands our knowledge and control of the world in ways that affect-but are also affected by-society and culture. In Making Modern Science, a text designed for introductory college courses in the history of science and as a single-volume introduction for the general reader, Bowler and Morus explore both the history of science itself and its influence on modern thought. Opening with an introduction that explains developments in the history of science over the last three decades and the controversies these initiatives have engendered, the book then proceeds in two parts. The first section considers key episodes in the development of modern science, including the Scientific Revolution and individual accomplishments in geology, physics, and biology. The second section is an analysis of the most important themes stemming from the social relations of science—the discoveries that force society to rethink its religious, moral, or philosophical values. Making Modern Science thus chronicles all major developments in scientific thinking, from the revolutionary ideas of the seventeenth century to the contemporary issues of evolutionism, genetics, nuclear physics, and modern cosmology. Written by seasoned historians, this book will encourage students to see the history of science not as a series of names and dates but as an interconnected and complex web of relationships between science and modern society. The first survey of its kind, Making Modern Science is a much-needed and accessible introduction to the history of science, engagingly written for undergraduates and curious readers alike.

Celebrating Suprematism—Christina Lodder 2018-11-01 Celebrating Suprematism focusses on Kazimir Malevich's abstraction. It examines the movement's relationship to the philosophical, scientific, aesthetic, and ideological ideas of the period, establishing a profound and nuanced appreciation of its place in twentieth-century visual and intellectual culture.

The American Experiment—James MacGregor Burns 2013-05-21 The Pulitzer Prize–winning author’s stunning trilogy of American history, spanning the birth of the Constitution to the final days of the Cold War. In these three volumes, Pulitzer Prize– and National Book Award–winner James MacGregor Burns chronicles with depth and narrative panache the most significant cultural, economic, and political events of American history. In The Vineyard of Liberty, he combines the color and texture of early American life with meticulous scholarship. Focusing on the tensions leading up to the Civil
War, Burns brilliantly shows how Americans became divided over the meaning of Liberty. In The Workshop of Democracy, Burns explores more than a half-century of dramatic growth and transformation of the American landscape, through the addition of dozens of new states, the shattering tragedy of the First World War, the explosion of industry, and, in the end, the emergence of the United States as a new global power. And in The Crosswinds of Freedom, Burns offers an articulate and incisive examination of the US during its rise to become the world’s sole superpower—through the Great Depression, the Second World War, the Cold War, and the rapid pace of technological change that gave rise to the “American Century.”

**Devotion to Their Science**-Marelene F. Rayner-Canham 1997-05-28 A Devotion to Their Science includes biographical essays on twenty-three women who worked in atomic science during the first two decades of the twentieth century, including Marie Curie, Lise Meitner, Irène Joliot-Curie, and a host of lesser-known women scientists whose life stories have never before been told. The biographies highlight the lives and work of these women, noting their contributions and the challenges they faced and overcame. Taken together the essays record their collective experiences, highlighting the support network that developed among them and the reasons women were more predominant in this field than in other sciences in the early part of this century. By recovering and recording individual and collective histories of the many eminent women in radioactivity whose work had a major impact on the scientific discoveries of the twentieth century, a more complete, gender-integrated view of the history of this fascinating field emerges.

**Unifying the Universe**-Hasan S. Padamsee 2002-11-05 Unifying the Universe: The Physics of Heaven and Earth provides a solid background in basic physics. With a humanistic perspective, it shows how science is significant for more than its technological consequences. The book includes clear and well-planned links to the arts and philosophies of relevant historical periods to bring science and the human

**Scientists, Mathematicians and Inventors**-Doris Simonis 2019-11-04 Scientists, Mathematicians, and Inventors provides biographies of 200 men and women who changed the world by leaving lasting legacies in the fields of science, mathematics, and scientific invention. It fills a gap in the biographical reference shelf by offering far more than basic facts about a scientist’s life and work: each entry describes not only the immediate effects of the individual’s discoveries, but also his or her impact on later scientific findings.

**Lise Meitner and the Dawn of the Nuclear Age**-Patricia Rife 2019-08-09 This biography of Lise Meitner (1878-1968), the Austrian Jewish female physicist at the heart of the discovery of nuclear fission, also looks at major developments in physics during her life. Meitner was a colleague and friend of many giants of 20th century physics: Max Planck, her Berlin mentor, Einstein, von Laue, Marie Curie, Chadwick, Pauli and Bohr. She was the first woman to earn a Ph.D. in physics at the University of Vienna, a pioneer in the research of radioactive processes and, together with her nephew Otto Robert Frisch, an interpreter of the process of nuclear fission in 1938. Yet at the end of World War II, her colleague of thirty years, radiochemist Otto Hahn alone was awarded the 1944 Nobel Prize in Chemistry for the “discovery” of nuclear fission — a discovery based on years of research in which Meitner was directly involved before her secret 1938 escape from Nazi Germany to Sweden. “A story of one of the half dozen most remarkable women of the 20th century.” — John Archibald Wheeler, Princeton University “Patricia Rife’s biography truly brings Meitner to life, both as a scientist and as a woman... Rife weaves Meitner’s personal struggles into the social and political fabric of her times. For example, the story of Meitner’s early career is told against the backdrop of the development of the new physics, with plentiful illumination of the limited prospects for women scientists in the German-speaking world during the early part of this century. When Meitner’s story enters the Nazi era — including her escape from Germany — it is as riveting as the best novel.” — Catherine Westfall, Technology and Culture “A well-written, thorough, readable and engaging work.” — Gary Goldstein, Peace and Change: A journal of Peace Research “Rife has produced an exciting book, which reads like a novel and she gives justice to Meitner’s life full of science and human stories... [The] book is a beautiful tribute to an outstanding scientist; it has a lot to teach us about our world; and it is a great read. I warmly recommend it to everyone interested in science and in history.” — Structural Chemistry “Lise Meitner comes to life as author Rife skillfully weaves social, political, and scientific events into a well-researched and documented work. Lists of Meitner’s awards and publications and an extensive bibliography complete this excellent book.” — Association of Women in Science Magazine “The dramatic tale of the discovery of nuclear fission on the eve of WWII... not just a story of ideas... but also of the social and intellectual milieu in which these ideas were developed. It is also the story of how a shy, self-effacing young woman, through talent and hard work, became a world-class scientist... Rife tells this story very well.” — The Antioch Review “The particular merit of Rife’s biography of Austrian physicist Meitner is that it places her life and work within the historical context... It is comprehensive, generally clearly written... and appropriate for undergraduate students. Just enough science is included as to make clear the significance of her work... Extensive bibliography, informative footnotes.” — Choice

**Flash of the Cathode Rays**-Per F Dahl 1997-01-01 The electron is fundamental to almost all aspects of modern life, controlling the behavior of atoms and how they bind together to form gases, liquids, and solids. Flash of the Cathode Rays: A History of J.J. Thomson’s Electron presents the compelling story of the discovery of the electron and its role as the first subatomic particle in nature. The book traces the evolution of the concept of electrical charge, from the earliest glow discharge studies to the final cathode ray and oil drop experiments of J.J. Thomson and Robert Millikan. It also provides an overview of the history of modern physics up to the advent of the old quantum theory around 1920. Consolidating scholarly material while incorporating new material discovered by the
The well-respected author, the book covers the continental and English race for the source of the cathode rays, culminating in Thomson's corpuscle in 1897. It explores the events leading to Millikan's unambiguous isolation of the electron and the simultaneous circumstances surrounding the birth of Ernest Rutherford's nuclear atom and the discovery of radioactivity in 1896. The author also focuses on the controversies over N-rays, Becquerel's positive electron, and the famous Ehrenhaft-Millikan dispute over subelectrons. Scholarly yet accessible to those with basic physics knowledge, this book should be of interest to historians of science, professional scientists and engineers, teachers and students of physics, and general readers interested in the development of modern physics.

Image and Logic-Peter Galison 1997-10 Engages with the impact of modern technology on experimental physicists. This study reveals how the increasing scale and complexity of apparatus has distilled physicists from the very science which drew them into experimenting, and has fragmented microphysics into different technical traditions.
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