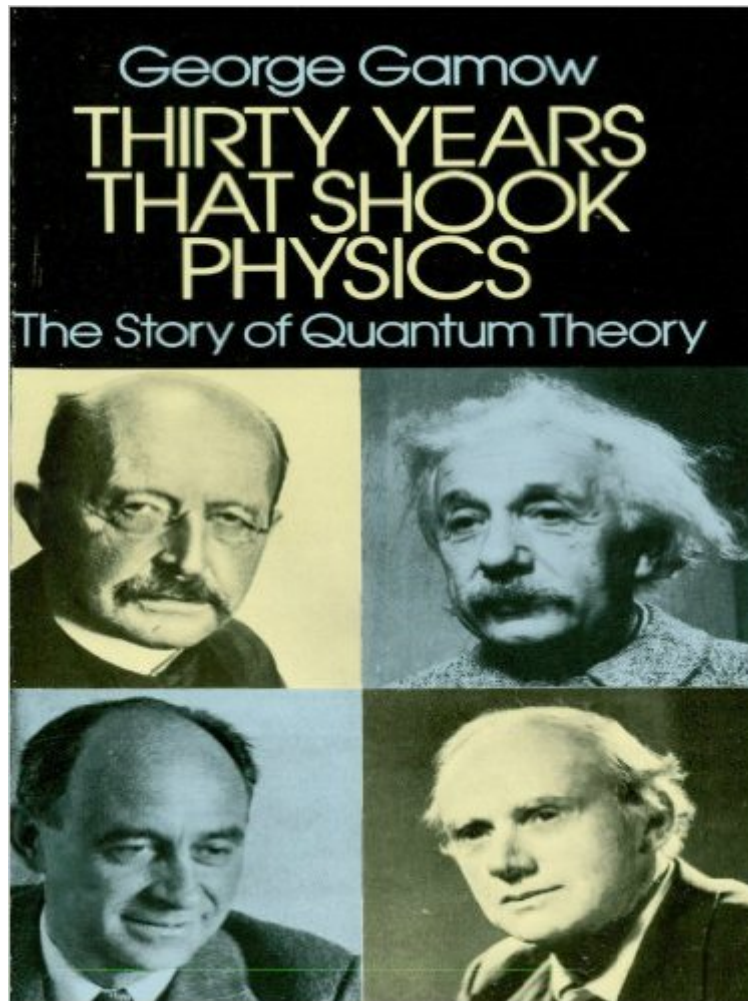


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# Thirty Years That Shook Physics: The Story Of Quantum Theory



## Synopsis

"Dr. Gamow, physicist and gifted writer, has sketched an intriguing portrait of the scientists and clashing ideas that made the quantum revolution." — Christian Science Monitor

In 1900, German physicist Max Planck postulated that light, or radiant energy, can exist only in the form of discrete packages or quanta. This profound insight, along with Einstein's equally momentous theories of relativity, completely revolutionized man's view of matter, energy, and the nature of physics itself. In this lucid layman's introduction to quantum theory, an eminent physicist and noted popularizer of science traces the development of quantum theory from the turn of the century to about 1930 — from Planck's seminal concept (still developing) to anti-particles, mesons, and Enrico Fermi's nuclear research. Gamow was not just a spectator at the theoretical breakthroughs which fundamentally altered our view of the universe, he was an active participant who made important contributions of his own. This "insider's" vantage point lends special validity to his careful, accessible explanations of Heisenberg's Uncertainty Principle, Niels Bohr's model of the atom, the pilot waves of Louis de Broglie and other path-breaking ideas. In addition, Gamow recounts a wealth of revealing personal anecdotes which give a warm human dimension to many giants of 20th-century physics. He ends the book with the Blegdamsvej Faust, a delightful play written in 1932 by Niels Bohr's students and colleagues to satirize the epochal developments that were revolutionizing physics. This celebrated play is available only in this volume. Written in a clear, lively style, and enhanced by 12 photographs (including candid shots of Rutherford, Bohr, Pauli, Heisenberg, Fermi, and others), *Thirty Years that Shook Physics* offers both scientists and laymen a highly readable introduction to the brilliant conceptions that helped unlock many secrets of energy and matter and laid the groundwork for future discoveries.

## Book Information

File Size: 13116 KB

Print Length: 272 pages

Publisher: Dover Publications; Revised ed. edition (May 11, 2012)

Publication Date: May 11, 2012

Sold by: Digital Services LLC

Language: English

ASIN: B008TVLS3K

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Enabled

Lending: Not Enabled

Enhanced Typesetting: Enabled

Best Sellers Rank: #128,797 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #5 in Kindle Store > Kindle eBooks > Nonfiction > Science > Physics > Molecular Physics #39 in Kindle Store > Kindle eBooks > Nonfiction > Science > Physics > Quantum Theory #135 in Books > Science & Math > Physics > Quantum Theory

## Customer Reviews

A reprinted Dover edition of a lovely set of biographies of the physicists of the Golden Period, from the pen of George Gamow. The original 1966 edition has been out of print for a number of years.

This 1985 edition is beautifully reproduced, and it includes fascinating pictures, sketches, and poems, done by Gamow himself. He was born in Odessa, in what was then Russia, --before the Soviet Union. The story of his escape to the West is straight out of a thriller. Only it is real! Later in the US, Gamow was referred to by a journalist,--- some time during the Cold War, as "the only scientist in America with a real sense of humor". With his lovely books, we have now all come to experience how Gamow can take the most technical stuff and make it simple. Fun too! The book:--Intellectual treats, whimsy, but deep. It contains penetrating and personal biographies of Niels Bohr, Paul Ehrenfest, Wolfgang Pauli, Werner Heisenberg, Albert Einstein, and recollections from the conferences in the 1930ties in Copenhagen, Brussels, and in the Solvay Institute.

Illustrated with lovely drawings by Gamow himself. A book with pictures and conversations! Much of it can be understood by a child, and other parts might require a little concentration. All of it is great fun. The author Gamow started in nuclear physics, during the Golden Age of Physics, worked with Niels Bohr, then later in the US, on the Manhattan Project during WWII, and after the war, he was professor in Boulder Colorado. He has a building on campus named after him! The books he wrote are pearls, and they have been equally popular with my parent's generation as with mine. Luckily some have been reprinted! Other Gamow titles: Biography of Physics, Atomic Energy [dedicated to the hope of lasting peace], Physics of the Strapless Evening Gown,...

George Gamow's "Thirty Years That Shook Physics" is an exceptional book, an entertaining look at the physicists (including himself) that participated in the unveiling of quantum theory. His book is enlivened by unique photos of the great physicists and mathematicians, their families and friends. We see Niels Bohr and his wife on a motorcycle, Wolfgang Pauli and George Gamow (in

lederhosen) on a steamer on a Swiss Lake, Werner Heisenberg in swim trunks, Enrico Fermi playing tennis without a shirt, George Gamow and Leon Rosenfeld resting on a snow covered peak (supposedly discussing nuclear physics), and Niels Bohr and Albert Einstein chatting at a technical session in Brussels. Many contemporary books on physics for the layman, following publisher's dictates, scrupulously avoid all mathematics. Writing in the 1960's, Gamow assumed that algebraic equations, graphs, and diagrams of experimental setups would actually help clarify explanations and not send readers fleeing in panic. Algebra is necessary; more advanced math is not. Gamow is fun to read, but be prepared to think. It is amusing how many of the reviewers mention that they first encountered Gamow in their youth. I too read Gamow, reveling in the excitement of scientific work and discovery. Gamow adds a bit of fun and comedy to science. We all learn (but may have forgotten) about the Pauli Exclusion Principle that only two electrons with opposite spins can occupy the same quantum orbit. Gamow also introduces us to a lesser known observation, the Pauli Effect, which states that the mere presence of Wolfgang Pauli, a theoretical physicist, near a laboratory ensured that the experimental apparatus would break.

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