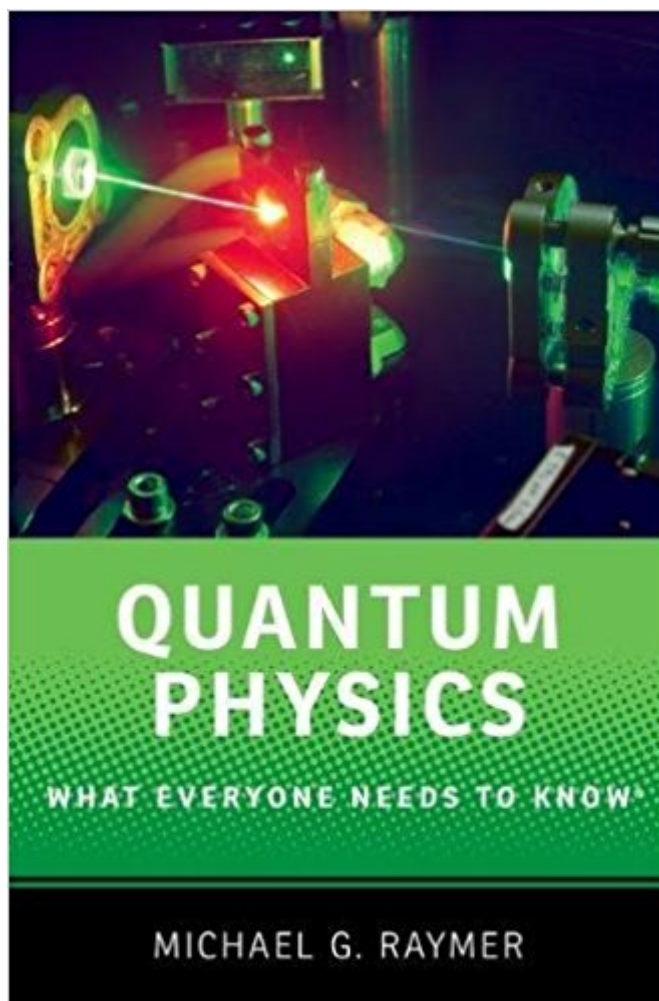


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# Quantum Physics: What Everyone Needs To Know<sup>®</sup>



## Synopsis

Around 1900, physicists started to discover particles like electrons, protons, and neutrons, and with these discoveries believed they could predict the internal behavior of the atom. However, once their predictions were compared to the results of experiments in the real world, it became clear that the principles of classical physics and mechanics were far from capable of explaining phenomena on the atomic scale. With this realization came the advent of quantum physics, one of the most important intellectual movements in human history. Today, quantum physics is everywhere: it explains how our computers work, how lasers transmit information across the Internet, and allows scientists to predict accurately the behavior of nearly every particle in nature. Its application continues to be fundamental in the investigation of the most expansive questions related to our world and the universe. However, while the field and principles of quantum physics are known to have nearly limitless applications, the fundamental reasons why this is the case are far less understood. In *Quantum Physics: What Everyone Needs to Know*, quantum physicist Michael G. Raymer distills the basic principles of such an abstract field, and addresses the many ways quantum physics is a key factor in today's science and beyond. The book tackles questions as broad as the meaning of quantum entanglement and as specific and timely as why governments worldwide are spending billions of dollars developing quantum technology research. Raymer's list of topics is diverse, and showcases the sheer range of questions and ideas in which quantum physics is involved. From applications like data encryption and quantum computing to principles and concepts like "quantum nonlocality" and Heisenberg's uncertainty principle, *Quantum Physics: What Everyone Needs to Know* is a wide-reaching introduction to a nearly ubiquitous scientific topic.

## Book Information

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## Customer Reviews

Dr. Michael G. Raymer is Philip H. Knight Professor of Liberal Arts and Sciences and Professor of Physics, University of Oregon. He was founding Director of the Oregon Center for Optical, Molecular and Quantum Science.

As an educator and quantum mechanic for 30 some years, I have struggled when suggesting the best book to describe quantum physics deeply without the pain of math. Some are too simple, analogies of dubious value. Some are decent, and then comes the sentence from hell that should be a chapter. Professor Raymer has set the standard in my opinion for a well written and correct description of quantum physics. He captures the excitement of recent events, and does not just go on a death march through history. It is the truth, no more, and no less. No needless hyperbole or wild speculation, but an honest appraisal of what Quantum Physics is, and what it is not.

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