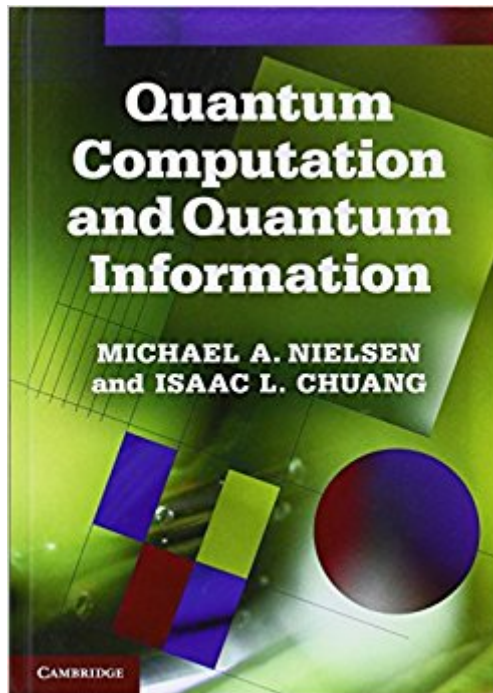


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# Quantum Computation And Quantum Information: 10th Anniversary Edition



## Synopsis

One of the most cited books in physics of all time, Quantum Computation and Quantum Information remains the best textbook in this exciting field of science. This 10th anniversary edition includes an introduction from the authors setting the work in context. This comprehensive textbook describes such remarkable effects as fast quantum algorithms, quantum teleportation, quantum cryptography and quantum error-correction. Quantum mechanics and computer science are introduced before moving on to describe what a quantum computer is, how it can be used to solve problems faster than 'classical' computers and its real-world implementation. It concludes with an in-depth treatment of quantum information. Containing a wealth of figures and exercises, this well-known textbook is ideal for courses on the subject, and will interest beginning graduate students and researchers in physics, computer science, mathematics, and electrical engineering.

## Book Information

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## Customer Reviews

Nielsen and Chuang's book can still be considered the main reference book on quantum information and computation, even after more than 10 years of the original release. I'd highly recommend it to anyone who is looking for a reference to start from. However, if you already own the original version of the book, be warned that this book is basically a reprint of the first edition. It's true that it comes with a new introduction and afterword from the authors - but the new material is only 4 (four) pages long, and can be found online for free in this very site under the "Look inside" link. This is the reason why I gave 4 stars instead of 5 - I believe that a "10th Anniversary Edition" deserved a little bit more than 4 pages of new information, especially in the case of a book on a very dynamic field.

This title is really promising, but on a Kindle it's absolutely unreadable. When a formula comes along (sometimes, three or four per page) I have to click and hold on the graphic, select "Zoom", and then view a grainy, digitized version of the formula. Because of the poor resolution, the formula is sometimes unreadable. The same is true for illustrations. Worse yet, some symbols end up being in-lined graphics. " $1/\sqrt{2}$ ", for example, shows the square root symbol and the number two as a graphic: " $1/\square$ ", where " $\square$ " is a tiny square graphic. In this situation, I'm unable to select the graphic to expand it. If I can't guess the content of the formula from the context in the text, I'm simply stuck: I can't read the content. I feel badly giving this book only two stars, but the Kindle version really is that unreadable. Amazon should be working to fix these issues and make the Kindle a viable platform for technical books. As far as I can tell, Amazon scans titles and doesn't do adequate cleanup work for things (like formula with Greek characters and mathematical symbols) that don't reliably OCR. Poor content squanders the potential value in their platform, so you think they'd be motivated to make the platform work as well as possible. Until they come to their senses, you'll have to carry books like this (no matter how well-written) in your backpack instead of conveniently hosting them on your Kindle reader.

**Quantum Computation and Quantum Information: 10th Anniversary Edition** This book is definitely THE source to turn to for an understanding of Quantum Computation and Information. One can only read through the first chapter and you are given the key feature of Quantum Computation and Information. The advantage of this approach is that Chapter 1 establishes a Quantum roadmap of what you need to know. You can stop there or you can dive deeper into the technology. Using the remaining chapters as a reference or continuation of course studies. But, it is the 10th Edition and I would have liked to see some new information associated with current trends in Quantum Computing. For examples: 1) Adiabatic versus Gate Arrays, 2) Quantum instructions examples, whether it is by circuit manipulation or by an Objective function, 3) A review section on quantum Notations (logic, Bra-kets, linear algebra) to help readers get back into it again. This is THE book for those interested in finding out what is Quantum computers, but go slow with the first chapter and use the internet to clarify topics that are new to you, or to just refresh your memory. If you can skip through Chapter 1, you don't need the book.

This is not an easy read. But I got started in QC and got the hard copy due to complaints about the digital version. In hindsight being able to put tabs on pages on a book this big is probably easier

than managing it electronically. Lots of material in this book. Unfortunately the only QC I have access too doesn't have a lot of qbits.

The bible of Quantum Information. This is my field of research, and there is only one other go to text.

This is a quite popular book even after ten years of the first edition. It is also adopted in many courses around the globe. However, I think the authors should put more effort in providing more solved examples so that the book can be easier to follow for self-study. Some problems are based on published papers.

This book will take you from nothing to research level.

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