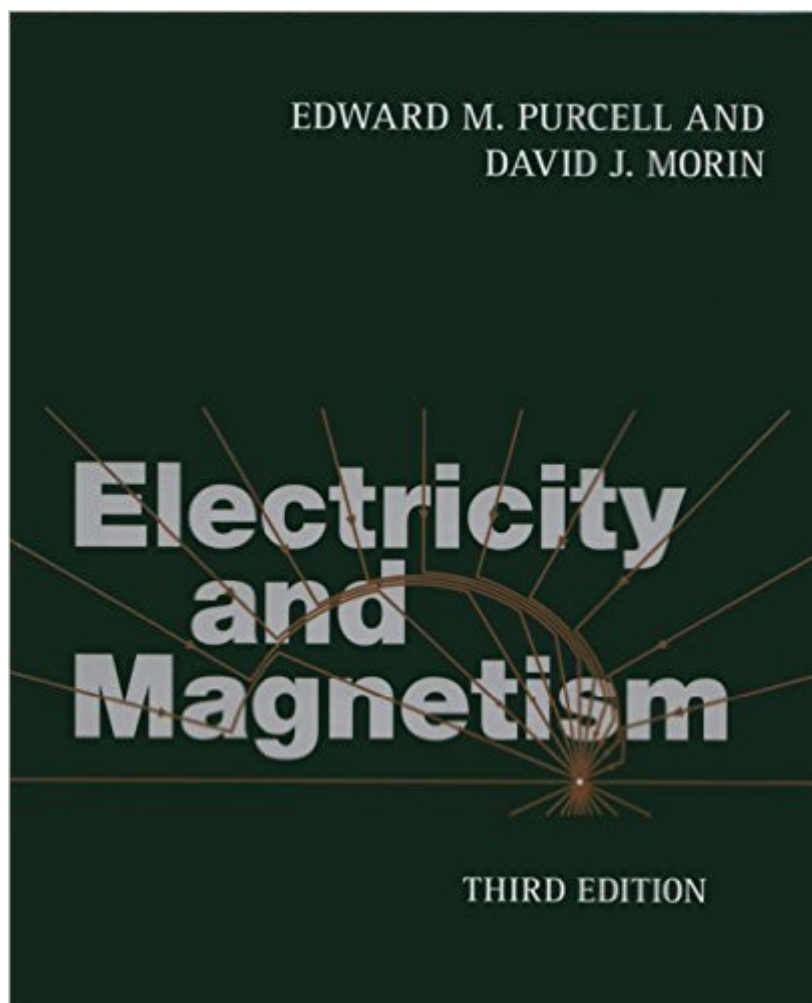


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Electricity And Magnetism



Synopsis

For 50 years, Edward M. Purcell's classic textbook has introduced students to the world of electricity and magnetism. The third edition has been brought up to date and is now in SI units. It features hundreds of new examples, problems, and figures, and contains discussions of real-life applications. The textbook covers all the standard introductory topics, such as electrostatics, magnetism, circuits, electromagnetic waves, and electric and magnetic fields in matter. Taking a nontraditional approach, magnetism is derived as a relativistic effect. Mathematical concepts are introduced in parallel with the physics topics at hand, making the motivations clear. Macroscopic phenomena are derived rigorously from the underlying microscopic physics. With worked examples, hundreds of illustrations, and nearly 600 end-of-chapter problems and exercises, this textbook is ideal for electricity and magnetism courses. Solutions to the exercises are available for instructors at www.cambridge.org/Purcell-Morin.

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Customer Reviews

"Although the basic physics remains largely unchanged, the Purcell and Morin book has many clarifying discussions based on those experimental results, and most chapters end with current applications and a summary. Solutions to the problems represent roughly one-quarter of the text-they are a most welcome addition, particularly for self-study. (Purcell wrote out a solution manual by hand-mainly for instructors!-to accompany his first edition.) " H. Henry Stroke, New York University for Physics Today

Introducing students to the world of electricity and magnetism, the third edition of this classic textbook has now been converted to SI units and features additional examples and problems. It covers all the standard introductory topics and contains hundreds of illustrations and nearly 600 end-of-chapter problems and exercises.

I would say only this: Provided you have some basis on Special Relativity, this is the best first textbook on Electricity and Magnetism. Surely, after it you will need some other text with a stronger emphasis on mathematics. But the physical knowledge/intuition is built here better than in any other book, thanks to the wonderful/delightful explanations of Edward Purcell. At the undergraduate level is possibly one of the best written books in physics.

This book is very rigorous. The author demonstrates outstanding writing skills; the explanations are very clear and precise. Do your homework on vector calculus. There is hardly no review on the subject. The book jumps head first into vector calc., so if you're rusty on the subject I strongly recommend you review it, or have a calc. textbook at the ready. Sit back and enjoy the ride; this book is amazing.

I studied it in my years of university, subsidiarily to Halliday (the main text) and liked very much of Purcell's book. It's more hard that Halliday's and I don't like of CGS system. But the explanations are good and the problems were interesting, and many times challenging. Now appear a new version, perfectly corrected, MKS system, and with many problems solved and others proposed. The level is from intermediated to advanced, in between Halliday and Reitz (or Griffiths), more near Reitz. It is time of review my forty years old knowledge of electromagnetism and it will be with Purcell's.

In your introductory EM course, this may seem a bit too much. But after reviewing the subject after you take upper division, you will see that this was actually amazing in detail as it takes from other subjects and combines all relevant information.

This is really quite an excellent book. Purcell's explanations are usually very clear, and reading the book can even be pleasurable and at times humorous. The pictures are often very helpful, and the tables/graphs offer useful information. I especially loved his treatment of magnetism as a result of special relativity. He put this right in the introduction, which I found quite interesting and intuitive.

This is the best freshman E&M text of all time -- provided that the class consists of students ready to handle the material at this level. Although the necessary tools of vector calculus are introduced from scratch, I doubt that most students would be able to get up to speed unless they had already had vector calculus or were at least taking it concurrently. The best known innovation of this book was the presentation of magnetism as a consequence of relativity. The book assumes you've already learned special relativity. (There is an appendix on SR in the 3rd edition, but realistically that wouldn't be sufficient.) I ordered a copy of the 3rd edition (\$76), and compared it side by side with my disintegrating but much-loved copy of the 1965 1st edition. The price is amazingly reasonable compared to the kind of exploitative prices you see these days for textbooks. One thing I'd never noticed before is that the 1st edition has a notice on its copyright page saying that it's available for royalty-free use after 1970. (It was an NSF-sponsored project.) So theoretically it's legal to scan it and put it on the web for free. However, what I find when I look around on the web is people illegally making the 2nd edition available through sleazy file-sharing sites. The most important change is the switch from cgs to SI units. Three cheers. Without this change the book would have stayed in the ghetto forever. The 3rd edition is almost twice the bulk of the 1st. This is mostly because there are far more problems, and many of them have complete solutions in the back of the book. This is a great new feature. There is also an applications section at the end of every chapter. For the most part, though, it's exactly the same text with only a very few minor changes here and there. The line art is mostly the same. The graphic design isn't as nice as in the 1st edition, which often used gray backgrounds on the figures, with a full bleed. In the 3rd edition, the figures often aren't sufficiently clearly divided from the text, and the effect is extremely ugly.

Excellent book. It is very didactic with very good explanations and pertinent mathematical derivations.

Descriptions are outstanding.

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