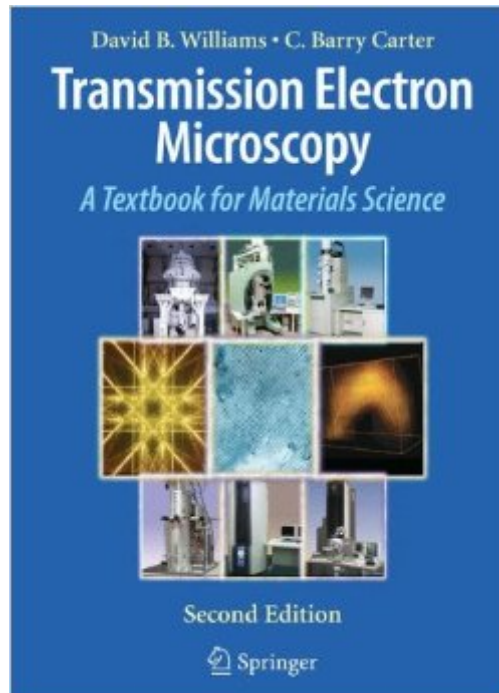


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Transmission Electron Microscopy: A Textbook For Materials Science



Synopsis

This profusely illustrated text on Transmission Electron Microscopy provides the necessary instructions for successful hands-on application of this versatile materials characterization technique. The new edition also includes an extensive collection of questions for the student, providing approximately 800 self-assessment questions and over 400 questions suitable for homework assignment.

Book Information

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Customer Reviews

I find this book probably the best textbook in materials science I ever read. Not only the authors are experts in the field of microscopy, but they also succeeded in extremely difficult task to present the complicated science of electron microscopy in a simple (but not oversimplified!) language. The book covers all major aspects of transmission electron microscopy, and contains excellent illustrations. This book is certainly a priceless asset for students. It is recommended as one of the best books at the beginning and intermediate level. If you are looking for a book to learn TEM, get this one, you will never regret!

In the 70's and 80's the book by Hirsch et al. was the TEM reference tome, and Eddington's book the applications manual. Time has marched on, and this book is the new replacement for both! Carter and Williams wrote a very easy to read, yet well detailed, text and reference for TEM. They cover quite literally everything, in just the right level of detail for 1st or 2nd year grad students. This book is

the best way to get a quick grasp of TEM.

Transmission Electron Microscopy: A Textbook for Materials Science (4 Vol set) It is like the Bible for TEM. Great book lots of diagrams and pictures greatest book for TEM

This 4-volume set of paperback books provides a thorough and readable introduction to the science and practice of TEM (transmission electron microscopy). The text is divided into short, digestible sections, each accompanied by figures, graphs and plots. The equations are numerous, but well explained and presented with minimal derivations but full explanations. The books are divided into concise sections making it easy for the reader to find what he/she needs. Overall, a perfect textbook to learn about TEM, and as a reference for those more experienced in this field.

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I bought this book as soon as I found out I would likely get a job working with TEMs. I had already bought a very physics oriented book by Reimer that is also excellent, but this book is simply a joy to read. Ample color diagrams and real micrographs together with witty, keen narrative make it the first technical book in years that I have read till the wee hours of the morning. I think that if you can read the whole book and retain 90% of what you have read and have the opportunity to apply it in real life on an actual TEM then you will be able to call yourself a TEM expert of sorts. I have found that reading the Reimer text together with this one makes a hard to beat combination. When the physics gets too tough in Reimer I take a break and read this text and get a better intuitive grasp of the material or an alternate derivation with a few less triple integrals, then delve back into Reimer with renewed vigor. To the authors, I would like to buy you both a round of beers some day, this text is timely and I am glad to have found it when I did.

This textbook is a fantastic introduction to transmission electron microscopy because of the informal, lecture-like layout of each chapter. The authors do not assume anything more than a basic knowledge of physics and optics and so describe in vivid detail what is happening in each chapter. There are numerous informal comments and asides that evoke an informal tone, sorely missing from the many pompous textbooks that abound in this field. I would highly recommend the text to

anyone looking for a basic introduction to the different kinds of transmission electron microscopy available and a thorough treatment of the physics and optics of these microscopes.

The item includes 4 volumes for a total of ~800 pages. It gives the basic knowledges on TEM, spectrometry, diffraction, imaging, and also on the instrument itself. However the chapter are not going too much in details about the physics, but addresses clearly what is important to keep in mind when using a TEM. Therefore it is a must have book for any user. I recommend to complete with other books like those from RF Egerton, especially for any EELS related topic that includes the thickness measurement of a sample. Other works from I. Pozsgai may also help in simplifying the mass-thickness method.

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