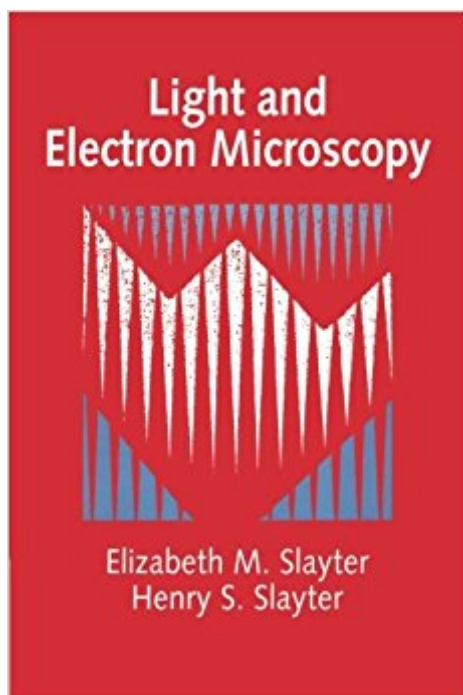


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# Light And Electron Microscopy



## Synopsis

This book describes the principles of operation of each type of microscope currently available and of use to biomedical and materials scientists. It explains the mechanisms of image formation, contrast and its enhancement, and accounts for ultimate limits on the size of observable details (resolving power and resolution). Finally it provides an account of Fourier optical theory. Principles behind the photographic methods used in microscopy are also described and there is some discussion of image processing methods. Throughout, the text emphasizes the underlying similarity of all microscope systems and, recognizing that biologists may often be uncomfortable with mathematical approaches every effort has been made to present concepts verbally.

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## Customer Reviews

"What a refreshing change to open a new book on microscopy that is not only packed with information on recent advances in the field but also contains a broad foundation of theoretical principles. The volume is slim, and it is hard to believe that the wide range of material is covered in such depth until one realizes what has been left out: the usual dreary rules of thumb for operating microscopes that might as well be describing masonic rituals for all the explanation--or intellectual stimulation--that they offer." Graham Dunn, *Nature*

Optical and electron microscopes are often used effectively despite little knowledge of the relevant

theory or even of how a particular type of microscope functions. Eventually however proper use interpretation of images and choices of specific applications demand an understanding of fundamental principles. This book describes the principles of operation of each type of microscope currently available and of use to biomedical and materials scientists explains the mechanisms of image formation (contrast and its enhancement) accounts for ultimate limits on the size of observable details (resolving power and resolution) and finally provides an account of Fourier optical theory. Principles behind the photographic methods used in microscopy are described and there is some discussion of image processing methods. Throughout the text emphasises the underlying similarity of all microscope systems and recognising that biologists may often be uncomfortable with mathematical approaches every effort has been made to present concepts verbally. Where mathematical treatment is indispensable the nature of its contribution is made explicit.

This is a good book for beginners. It explains some complicated principles in easy way and makes one to understand the complicated microscope more quickly.

This is a classic, I am glad I found an copy for my library. This is required reading for any serious user of a microscope.

I have looked at many microscope books in vain, before this one, to find clear explanations of the key topics in optical microscopy for my graduate students. None come close to competing with the Slayters. Jerry Pine, Professor of Biophysics, Caltech

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