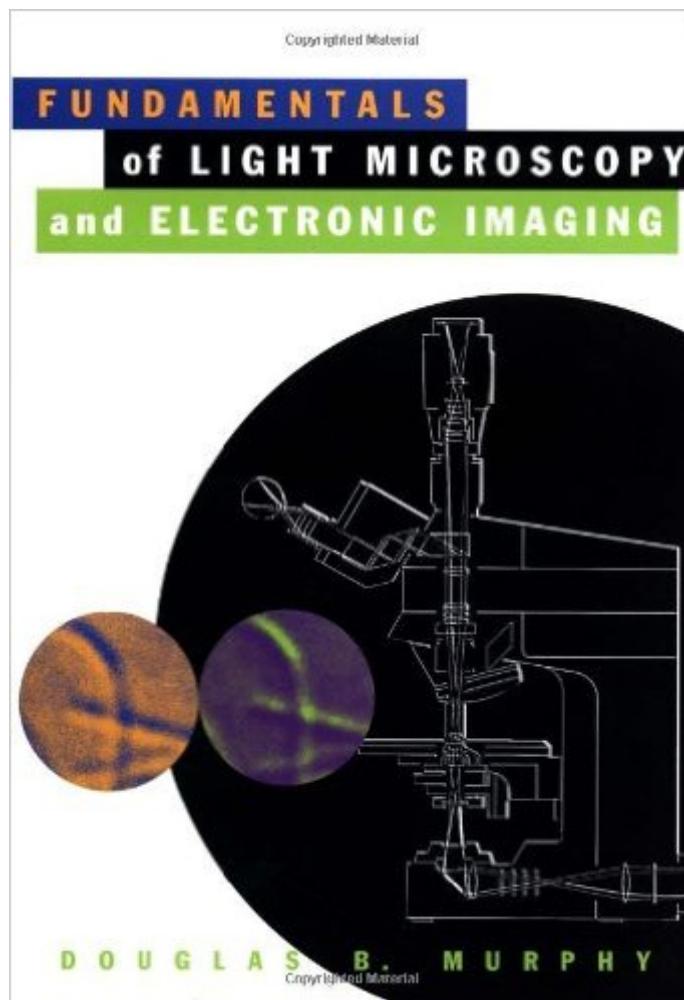


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# Fundamentals Of Light Microscopy And Electronic Imaging



## **Synopsis**

Over the last decade, advances in science and technology have profoundly changed the face of light microscopy. Research scientists need to learn new skills in order to use a modern research microscope—skills such as how to align microscope optics and perform image processing. *Fundamentals of Light Microscopy and Electronic Imaging* explores the basics of microscope design and use. The comprehensive material discusses the optical principles involved in diffraction and image formation in the light microscope, the basic modes of light microscopy, the components of modern electronic imaging systems, and the image processing operations necessary to acquire and prepare an image. Written in a practical, accessible style, *Fundamentals of Light Microscopy and Electronic Imaging* reviews such topics as: Illuminators, filters, and isolation of specific wavelengths Phase contrast and differential interference contrast Properties of polarized light and polarization microscopy Fluorescence and confocal laser scanning microscopy Digital CCD microscopy and image processing Each chapter includes practical demonstrations and exercises along with a discussion of the relevant material. In addition, a thorough glossary assists with complex terminology and an appendix contains lists of materials, procedures for specimen preparation, and answers to questions. An essential resource for both, experienced and novice microscopists.

## **Book Information**

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## **Customer Reviews**

Dr. Murphy constructs a solid foundation on the basic concepts of geometrical optics, light, and color, and then provides excellent introductory reviews of important topics in light microscopy. The

book is very well written and complex phenomena are clearly explained without the unnecessary math that often confuses students. Illustrations are numerous and help support the text very nicely, as do the suggested laboratory exercises that accompany each chapter. Discussions of digital cameras and image processing are timely and provide the essential concepts necessary to tackle more advanced treatises. In the opinion of the Molecular Expressions microscopy website team, this book is by far the best entry-level textbook in the field.

"This well written text provides a clear, uncluttered overview of the principles and practice of modern light microscopy. It contains many helpful teaching exercises and diagrams. It should prove useful in a wide range of courses from the undergraduate to the postgraduate level."-- Kenneth R. Spring, Ph.D., Author

This is the book that tells you how to actually do effective microscopy. Keep a copy by the microscope.

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