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Introduction To Fluorescence



Synopsis

The phenomenon known as fluorescence is now widely used in the chemical and life sciences largely due to the development of highly sophisticated fluorescent probe chemistries and the commercial availability of these probes as well as the development of novel microscopy approaches. Introduction to Fluorescence helps readers acquire a sound understanding of basic fluorescence theory and practice. It describes general principles in a straightforward way and uses examples from a variety of disciplines to demonstrate them. In color throughout, the book takes readers through the history of important discoveries to the most current advances. It introduces the fundamentals of the fluorescence phenomenon and gives detailed examples of fluorescence applications in the molecular life sciences, including biochemistry, biophysics, clinical chemistry and diagnostics, pharmaceutical science, and cell and molecular biology. The author presents the basic theories underlying the applications and offers in-depth information on practical aspects. Along with a list of references in each chapter, the text incorporates more than 250 figures that clearly illustrate the concepts and gives the chemical structures of the most widely used fluorescent molecules. In addition, the appendix provides a "Rogueâ™s Gallery" of the most common errors and pitfalls to avoid.

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Customer Reviews

"An essential contribution to educating scientists in the principles of fluorescence. It will also be an important addition to the libraries of practitioners applying the principles of molecular

fluorescence." •Ken Jacobson, Kenan Distinguished Professor of Cell Biology and Physiology, University of North Carolina at Chapel Hill "An exquisite compendium of fluorescence and its applications in biochemistry enriched by a very exciting historical perspective. This book will become a standard text for graduate students and other scientists." •Drs. Zygmunt (Karol) Gryczynski and Ignacy Gryczynski, University of North Texas Health Science Center " | truly a masterwork, combining clarity, precision, and good humor. The reader, novice or expert, will be pleased with the text and will not stop reading. It is a formidable account of the fluorescence field, which has impacted the life sciences so considerably in the last 60 years." •Jerson L. Silva, M.D., Ph.D., Professor and Director, National Institute of Science and Technology for Structural Biology and Bioimaging, Universidade Federal do Rio de Janeiro "Dr. Jamesonâ™s book fills a gap in the literature available for the student approaching the applications of fluorescence techniques as well as for the researcher practicing them daily in the laboratory setting. The subject is presented by the author in a clear didactic manner; the anecdotes and historical references make the book truly a delight to read." •Dr. Beniamino Barbieri, President, ISS Inc. "An excellent textbook! This comprehensive overview written at an introductory level covers fundamental aspects, principles of instrumentation, and practical applications of biological fluorescence, while providing many valuable tips. In essence, this book reflects the excellent didactic skills and vast experience of the author in research and teaching fluorescence. Highly recommendable for undergraduate teaching. Also excellent material for active researchers who are learning to apply fluorescence methods." •Prof. Luis Bagatolli, Center for Biomembrane Physics, Department of Biochemistry and Molecular Biology, University of Southern Denmark "I am very impressed by the authorâ™s lucid treatment. This book is a â™must readâ™ for students and researchers." •Prof. Amitabha Chattopadhyay, Ph.D., FRSC, J.C. Bose Fellow, Outstanding Scientist, Centre for Cellular & Molecular Biology, Hyderabad

David M. Jameson is a professor in the Department of Cell and Molecular Biology at the John A. Burns School of Medicine, University of Hawaii at Manoa, having previously served there as professor and chairman of the Department of Biochemistry and Biophysics. He earned his Ph.D. in biochemistry from the University of Illinois at Urbana-Champaign, where his graduate thesis advisor was Professor Gregorio Weber. Prior to his move to the University of Hawaii, he was a postdoctoral fellow at the University of Illinois at Urbana-Champaign and the CNRS, University of Paris-South and he was an assistant professor in the Department of Pharmacology at the University of Texas Southwestern Medical Center. Dr. Jameson is the co-organizer of the International Weber Symposia

on Innovative Fluorescence Methodologies in Biochemistry and Medicine, which have been held every three years since 1986 (since 1995 in Hawaii). He serves on the editorial boards of The Scientific World Journal, Analytical Biochemistry, and Methods and Applications in Fluorescence. He is a member of the advisory board for the Laboratory for Fluorescence Dynamics (supported by the National Institutes of Health) at the University of California, Irvine. He was the recipient of the 2004 Gregorio Weber Award for Excellence in Fluorescence Theory/Application.

I really like the book written by Prof. Jameson, it really complements other books on fluorescence spectroscopy. I find the style very appropriate for starting graduate student as well as undergrad working in a spectroscopy lab. The history presented by the author is of great interest and not often found in other books. The anecdotes and experimental techniques presented are of great help. Overall, this book is a must have for any laboratory dealing with spectroscopy.

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