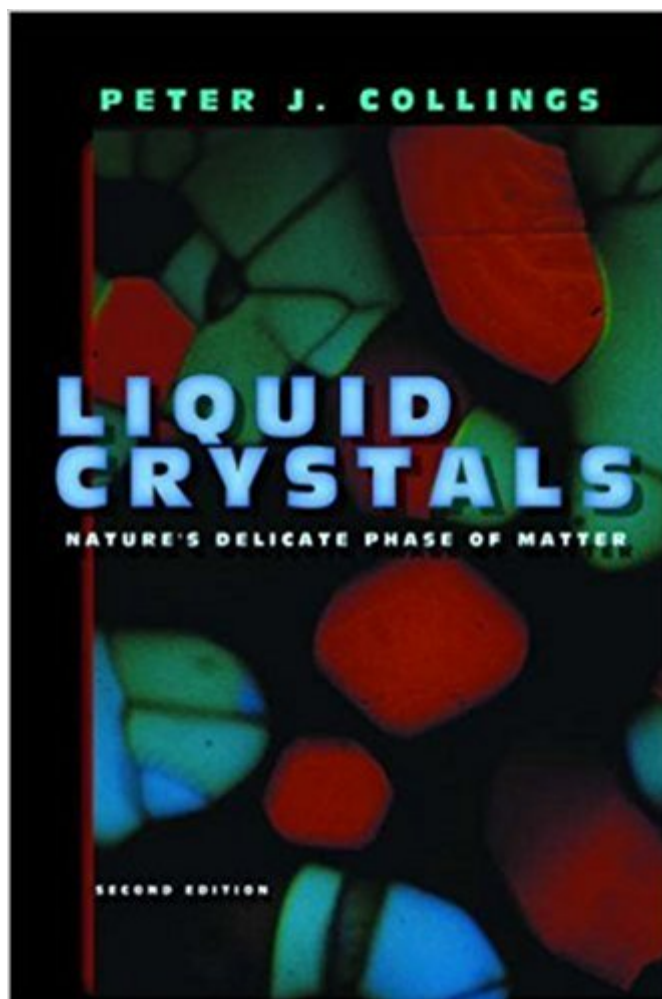




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Liquid Crystals: Nature's Delicate Phase Of Matter, Second Edition.



Synopsis

Liquid crystals are a phase of matter critical both in many recent scientific developments in biology, chemistry, and physics and in applications such as computer displays, electronic books, and new thermometers. This fully illustrated book builds on basic scientific concepts from biology, chemistry, and physics to explore the full range of the broad and interdisciplinary field of liquid crystal science. After a brief introduction to liquid crystals, the text sketches the history of research into this phase of matter, beginning with its discovery. Interesting in its own right, this history also demonstrates the crucial role that technological applications play in promoting scientific research. The behavior of the various liquid crystalline phases is described in detail, with an emphasis on the electrical and optical properties so important for applications. Applications are then covered, with in-depth attention given to how liquid crystals are used in computer-screen displays. Chapters dealing with liquid crystalline phases formed in solutions, the liquid crystal phases of polymers, and the biological significance of liquid crystals explore the huge range of phenomena associated with liquid crystals--from new high-strength fibers to the frontiers of cell-membrane research. Finally, there is a chapter highlighting current theoretical knowledge about why liquid crystals exist and why they have the properties they do. In this second edition, many portions of the highly praised first edition have been thoroughly revised and expanded to incorporate the tremendous theoretical and applied research advances made over the last decade. The result is an up-to-date and comprehensive description of liquid crystal science and technology at the introductory level. Students and researchers in a variety of fields will find this book an ideal entry to a highly productive area of inquiry.

Book Information

Hardcover: 200 pages

Publisher: Princeton University Press; Second edition (January 1, 2001)

Language: English

ISBN-10: 0691086729

ISBN-13: 978-0691086729

Product Dimensions: 9.4 x 6.4 x 0.8 inches

Shipping Weight: 1 pounds

Average Customer Review: 4.6 out of 5 stars 5 customer reviews

Best Sellers Rank: #927,696 in Books (See Top 100 in Books) #77 in [Books > Science & Math > Chemistry > Crystallography](#) #2701 in [Books > Science & Math > Chemistry > General & Reference](#) #2927 in [Books > Textbooks > Science & Mathematics > Chemistry](#)

Customer Reviews

"Peter Collings . . . has done an admirable job of producing a readable, technically sound, and enjoyable book. . . . The author's style is engaging, readable, and frequently entertaining. The organization of topics is excellent."--American Journal of Physics "A wonderful and readable book about an intriguing subject written in a lively, clear, and enthusiastic manner. . . . Collings provides an ideal introduction by using clear and simple illustrations and a minimum of mathematical innovations."--Choice "This new edition is one of the best introductory resources on this class of unique molecules. . . . Highly recommended for its engaging style and interesting subject matter."--Choice "The first edition of this text was very well received, and provided the first basic introduction to liquid crystals for newcomers to the field and students. . . . This edition will find similar popularity."--Andrew Cammidge, Chemistry & Industry

Peter J. Collings is the Morris L. Clothier Professor of Physics and Chair of the Department of Physics and Astronomy at Swarthmore College. He has conducted experimental research on liquid crystals for more than twenty-five years. He is the coauthor of introduction to Liquid Crystals: Chemistry and Physics and the coeditor of Handbook of Liquid Crystal Research.

A great book for people want to know some liquid crystal. easy to read yet inclusive.

New, quick delievery. It was raining but the item is clean and dry. A little bit drawing but overall it's is great.

A concise, entry level book for laymen, Collings covers the fundamentals of liquid crystals such as phase diagrams, defects, applications, textures, etc. The absence of derivations is either a plus or minus depending on your background. He gives the reader all the information needed to start from ground zero.

Though this is a textbook, it reads like a popular science book. Concepts are very well explained, and I found it a great read even though I didn't have any real reason to read this book (academic or professional). A great introductory book on liquid crystals.

I found the book very helpful and beautiful despite I can't ignore the fact that part of this beauty is embedded in its liquid crystal nature. The book covers almost every important aspect of liquid crystal

from its nature to application. The book is self-consistent in the sense that reader will not need to know any preliminary knowledge in this area even from physics and chemistry. You will not see any big formula. Readers who are quite familiar with basic concepts will probably find some parts boring but, to me, it is fine to hear them from another point of view emphasizing important phenomena in liquid crystals.

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