

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (R. F. Bryan, Department of Chemistry, University of Virginia, McCormick Road, Charlottesville, Virginia 22901, USA). As far as practicable, books will be reviewed in a country different from that of publication.

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Crystallization of nucleic acids and proteins: a practical approach. Edited by A. DUCRUIX and R. GIEGÉ. Pp. xxiv + 331. Oxford: IRL Press, 1992. Price £25.00. ISBN 0199632464.

The often daunting task of crystallizing a biological macromolecule has been simplified by the appearance of this comprehensive book on the subject. The editors, macromolecular crystallographers who have also studied the process of protein crystallization, have produced a work that is both a laboratory manual and a treatise on the physics of crystallization. A general discussion of crystallization, written by the editors, (chapter 1, 18 pp.) is followed by chapters on practical aspects of the crystallization experiment. These include discussions of sample preparation (B. Lorber & R. Giegé, chapter 2, 28 pp.) and experimental design (C. Carter, chapter 3, 27 pp.), with another chapter by the editors on crystallization methods (chapter 4, 27 pp.). In addition to two chapters on the basic approaches to crystallization - seeding techniques (E. Stura & I. Wilson, chapter 5, 28 pp.) and crystallization in gels (M. Robert, K. Provost & F. Jefauchaux, chapter 6, 19 pp.) - there are discussions on specialized crystallization methods for macromolecular complexes (A. Dock-Bregeon & D. Moras, chapter 7, 31 pp.), membrane proteins (F. Reiss-Husson, chapter 8, 21 pp.), and selenomethionyl proteins (S. Doublie & C. Carter, chapter 14, 19 pp.). A further practically grounded chapter (K. Ward, M. Perozzo & W. Zuk, chapter 13, 21 pp.) deals with attempts to automate crystallization. In general, the experimental techniques are presented in sufficient detail both to train a novice and to offer new technical options to the expert.

At a more theoretical level, recent research directed at the protein crystallization process has resulted in more scientific approaches to the general problem. This current trend is reflected in this book in chapters on the physical chemistry of protein crystallization (V. Mikol & R. Giegé, chapter 10, 23 pp.) and on phase diagrams (M. Ries-Kautt & A. Ducruix, chapter 9, 25 pp.). These chapters constitute the heart of the book, for here the discussions of factors that induce a macromolecule to move from solution into a crystalline solid are presented. The individual events of the crystallization process are described using phase diagrams, which help in understanding the interrelationships of the various experimental parameters. At the end of this section, methods of efficiently mapping phase space for an unknown protein are presented. Both these chapters, and related discussions throughout the book, provide the theoretical foundation needed to interpret results and to plan subsequent experiments.

All of this material is rounded out by two more general chapters: one on X-ray analysis (L. Sawyer & M. A. Turner, chapter 12, 37 pp.) and another on the soaking of crystals to produce derivatives and complexes (E. A. Stura & P. Chen, chapter 11, 14 pp.). A useful appendix lists suppliers of specialist equipment needed for crystallization experiments.

In summary, this is a modern laboratory manual useful for anyone working in this research area. Its value to the experimentalist lies in the presentation of techniques and, probably more importantly, in the discussions of crystallization theory.

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Restructuring of the IUCr editorial office

Following the promotion of Mr Michael Dacombe from Technical Editor to Executive Secretary, it was considered an opportune time to restructure the editorial office to reflect better the greater variety of work now carried out and to clarify the responsibilities of the staff.

Mr Peter Strickland has been appointed as Managing Editor with overall responsibility for both the technical editing and the centralized checking. Mrs Sue King has been appointed as Technical Editor. Dr Amanda Berry has been appointed as Assistant Technical Editor with special responsibility for the centralized checking. There are three Senior Editorial Assistants and six Editorial Assistants. Mr Brian McMahon is the Research and Development Officer and his assistant is Dr M. Hoyland. The total number of graduate staff in the editorial office is 14.