

Book review

Albrecht Messerschmidt, X-ray Crystallography of Biomacromolecules – A Practical Guide, Wiley-VCH, Weinheim, Germany, 2007.

“X-ray Crystallography of Biomacromolecules – A Practical Guide” written by Albrecht Messerschmidt is thought to be a practical pathfinder in the field of protein crystallography and is addressed in particular to students and researchers, who seek to understand the theoretical backgrounds and practical applications of protein crystallography.

The book concentrates especially on the communication of the theoretical basis of X-ray diffraction, the reciprocal space, data evaluation and processing. Additionally it contains plentiful descriptive and concise figures helping in understanding the complex text. Albrecht Messerschmidt thereby provides an in-depth analysis of the mathematics behind crystallography, though as detailed as they are presented, the derivations of the functions describing crystallographic procedures are due to their complexity rather ineligible for students of the life sciences but primarily are suited for experienced researchers, who want to deepen their understanding of the theory behind the mathematical routines of evaluation, processing and refinement programs. And that is where this book unveils its great potency, which is additionally aided by practical application examples in the second and much shorter part of the book. Shortcomings, however, arise in the weak didactic composition of the text, which impedes the approach to the matter of crystallography for inexperienced beginners, as elaborate skills in Higher Mathematics are

a prerequisite for a deeper understanding of the basics outlined in the book. Hence the subtitle “A Practical Guide” seems misleading. Admittedly, Albrecht Messerschmidt clearly states in the preface that “X-ray Crystallography of Biomacromolecules” is intended to confer the proficiency needed for the comprehension of the computer software necessary for structure determination. With respect to the informatics behind protein crystallography this book will prove to be an extremely useful companion and in this sense is beyond any doubt a powerful practical guide.

Concluding it has to be stated that Albrecht Messerschmidt’s “X-ray Crystallography of Biomacromolecules – A Practical Guide” is not very suitable for undergraduate students of molecular life sciences, but rather it is a well-grounded and detailed sourcebook for Ph.D. students and postdocs in the field of macromolecular crystallography.

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