

In the appendix a list of abbreviations for polymer names is given, but it does not help the reader to use the text as a reference book. For example, it is cumbersome to find out where abbreviations like LCP or NTP are introduced in the text.

The reproduction of photographs is of a high standard; some optical micrographs are even reproduced in color. The spelling of names, however, is incorrect in some cases. Obviously scientific publishing houses are not always able to reproduce special letters of foreign languages (e.g. as in Köhler, Poincaré, Michael-Lévy or the term Moiré pattern). This is irritating for a European reader. In spite of these remarks one can recommend the text to graduate students of polymer science as an introduction to the field, and to scientists as a reference book.

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Classical Light Scattering from Polymer Solutions. By P. Kratochvil. Elsevier, Amsterdam 1987. xii, 334 pp., bound, Dfl 240.00.—ISBN 0-444-42890-9

The author deals exclusively with classical light scattering by polymer solutions, in 321 pages of text. The book treats the subject at a very elementary level, and it is presumably intended as an introductory text for students. The theoretical background of classical light scattering is treated in a way which verges on the superficial, whereas the applications and experimental details are dealt with very thoroughly. The book begins with an introduction to the physical principles of light scattering. In this it already becomes apparent that Kratochvil, in his concern to present the subject in the simplest possible way, is prepared to forego a proper understanding of the physics; for example, the scattering vector is not introduced as such, but is instead referred to as "parameters for describing the angular dependence of the scattered light".

The second chapter deals in minute detail with methods of measurement and sample preparation. Here the reader benefits from the author's long experience in dealing with the everyday problems which arise in light scattering. There are also detailed descriptions of the main types of light scattering photometers, most of which are nowadays only of historical interest and are no longer marketed com-

mercially. The currently used differential refractometers are also discussed. Surprisingly, however, Kratochvil makes no mention of the existence of the modern laser light scattering photometers which have now been available for about five to eight years.

The third chapter deals with "basic light scattering techniques", such as fixed angle scattering, the dissymmetry method, and the well known Zimm method for analysis of light scattering. The only one of these which is still important nowadays is the Zimm method, which is discussed at some length; the other two methods have long since been consigned to history.

The next two chapters deal with light scattering by polymers in mixed solvents and scattering by copolymers, both of which are complex and many-faceted topics. The treatment in the book is limited to a qualitative description of the physical phenomena, but presents all necessary equations.

The book concludes by discussing the importance of light scattering for polymer characterization. It is first considered in relation to other methods such as viscometry and gel permeation chromatography, followed by a discussion of the characterization of branched structures and polyelectrolytes. The final chapter is very informative and useful since some light scattering curves for industrially important polymers such as PVC, polyethylene and polyamides are presented and discussed. The reader is (quite correctly) given the impression that the light scattering measurements as opposed to sample preparation are a relatively minor part of the work; aggregation or crystallization of the samples are usually found to interfere with their molecular characterization, and need to be minimized by choosing the most suitable experimental conditions (temperature and choice of solvent).

Considerable sections of the book are long-winded and tedious to read. The book could have been significantly reduced in length by stating the ideas more precisely and without the (superfluous) digressions into the history of light scattering. Despite this, the book will be useful for anyone wishing to begin work on classical light scattering, since no other comparable work exists.

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