

BIOMEDICAL APPLICATIONS OF LASER LIGHT SCATTERING

edited by **DAVID B. SATTELLE,
WYLIE I. LEE and BEN R. WARE**

BIOMEDICAL APPLICATIONS OF LASER LIGHT SCATTERING

Proceedings of a Workshop Meeting held in Cambridge, United Kingdom
7-10, September, 1981

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1982

ELSEVIER BIOMEDICAL PRESS
AMSTERDAM · NEW YORK · OXFORD

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ISBN 0-444-80456-0

Published by:

Elsevier Biomedical Press B.V.

P.O. Box 211

1000 AE Amsterdam, The Netherlands

Sole distributors for the USA and Canada:

Elsevier Science Publishing Company Inc.

52 Vanderbilt Avenue

New York, N.Y. 10017

PREFACE

Laser light scattering has matured greatly as a field of research since its inception in 1963. Initial investigations were conducted largely for the purpose of demonstrating the applicability of the technique to a variety of systems and the principal advances of these early years were in the development of the methodology. The efforts of both academic scientists and industrial engineers have led to great progress in the efficiency and accuracy of experimental measurements. In addition, sophisticated mathematical techniques for data analysis have been advanced for dealing with such commonly encountered complications as sample polydispersity, intramolecular motions, intermolecular interactions and aggregation, together with the complex patterns of particle motility. Throughout this phase of development there was the sustaining assumption that the essential applications of the technique would justify the considerable efforts involved.

Modern applications of laser light scattering are increasingly characterized by an emphasis on the system being studied. The practitioner is now obliged to be fully competent in the details of his experimental system in order (a) to design an appropriate experiment, (b) to execute the essential controls, and (c) to prepare proper specimens for analysis. To this end the modern laser light scattering investigator may be expected increasingly to read the literature and to attend the scientific meetings which are most relevant to the experimental system of his or her interest. Nevertheless, instrumental and theoretical advances in the technique are still forthcoming and the common elements of similar problems make it profitable for scientists engaged in laser light scattering to assemble from time to time in order to share their ideas and findings.

This book represents the proceedings of a meeting held in Trinity Hall College, Cambridge, U.K., September 7-10, 1981, being the first conference fully devoted to Biological and Medical Applications of Laser Light Scattering. The diverse range of successful applications described here are testimony to the timeliness of this assembly and the advanced state of development of the technique. The papers presented here were written by the invited speakers of the conference and are based on their lectures. In addition, brief communications have been submitted by a number of the participants who presented recent work in poster form. The organizations and industries listed at the beginning of this volume contributed to offsetting expenses, and without their generous support the conference could not have taken place.

The meeting included a display of modern light scattering equipment and components which have been so vital to the development of this field of study. On behalf of the participants the editors express their thanks to The Master and Fellows of Trinity Hall College for permission to use the College facilities, and to Dr. J.E. Treherne, Director of the Agricultural Research Council Unit in the Department of Zoology, Cambridge University, U.K., for his encouragement and support. The assistance of Mrs Ilse Prince, Mrs Jackie Stokes and Mrs Lynda M. Sattelle in organizing the conference is gratefully acknowledged. Finally the editors are particularly indebted to Mrs Margaret Clements, Mr. Roger Walkley and the staff of Elsevier/North-Holland for their invaluable assistance in the preparation of this volume.

Cambridge, September 1981

David B. Sattelle

Wylie I. Lee

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FINANCIAL SUPPORT

THE GENEROUS SUPPORT OF THE FOLLOWING ORGANIZATIONS IS
GRATEFULLY ACKNOWLEDGED

The Royal Society

The Agricultural Research Council

The British Council

The Company of Biologists Ltd.

Coherent Ltd. U.K.

E.I. du Pont de Nemours & Co., U.S.A.

Elsevier/North-Holland Publishing Co., Amsterdam, The Netherlands

EMI Industrial Electronics, U.K.

Grant Instruments, U.K.

Heineken, N.V., Amsterdam, The Netherlands

I.C.I. Ltd., U.K.

ITT Components Group, U.K.

Langley-Ford Instruments, U.S.A.

Malvern Instruments, U.K.

Oriel Scientific Ltd., U.K.

Ortho-Pharmaceutical Ltd., U.K.

Rofin Ltd., U.K.

Spectra-Physics, U.K.

Unilever Ltd., U.K.



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