Volume 107 (1997)

Progress in Colloid & Polymer Science

Analytical Ultracentrifugation IV

Guest Editors:
R. Jaenicke and
H. Durchschlag (Regensburg)

Editors:
F. Kremer (Leipzig)
G. Lagaly (Kiel)

This volume contains the contributions of the 10th Symposium on Analytical Ultracentrifugation, held in Regensburg on March 13th and 14th, 1997.
Topics in the following fields were presented:

- Technical Innovations
- Innovations in Data Analysis
- Modeling
- Biological Systems
- Ions and Polyelectrolytes
- Polymers, Colloids, Supramolecular Systems
- Emulsions, Gels, and Dispersions
- Interacting Systems and Assemblies

STEINKOPFF
DARMSTADT

Springer

PROGRESS IN COLLOID & POLYMER SCIENCE

Editors: F. Kremer (Leipzig) and G. Lagaly (Kiel)

Volume 107 (1997)

Analytical Ultracentrifugation IV

Guest Editors:

R. Jaenicke and H. Durchschlag (Regensburg)

Springer

ISBN 3-7985-1106-3
ISSN 0340-255 X

Die Deutsche Bibliothek –
CIP-Einheitsaufnahme

Progress in colloid & polymer science. –
Darmstadt : Steinkopff ; New York :
Springer
Früher Schriftenreihe
Vol. 107. Analytical ultracentrifugation
IV. – 1997
Analytical ultracentrifugation IV / guest ed.:
Jaenicke and Durchschlag. – Darmstadt :
Steinkopff, 1997
(Progress in colloid & polymer science ;
Vol. 107)
ISBN 3-7985-1106-3

Chemistry Editor:
Dr. Maria Magdalene Nabbe;
Production: Holger Frey, Ajit Vaidya.

Typesetting and Copy-Editing:
Macmillan Ltd., Bangalore, India

Printing: Druckhaus Beltz, Hemsbach

Progr Colloid Polym Sci (1997) V

PREFACE

The 10th Symposium on Analytical Ultracentrifugation took place at the University of Regensburg on March 13th and 14th, 1997. More than 100 participants, among them 30 speakers, met at the Institute of Biophysics and Physical Biochemistry (Faculty of Biology and Preclinical Medicine) to discuss recent results and developments in the fields of Macromolecular Chemistry, Biophysical Chemistry, and Polymer Science from the perspective of ultracentrifugal analysis. In the present volume of Progress in Colloid & Polymer Science selected topics from the lectures and posters have been collected in order to give an overview over the present state of the art in ultracentrifugation at the turning point from the preferably manual to the fully computerized methodology.

It has been a festive occasion to host the ultracentrifuge community in Regensburg again after a pause of 12 years. Clearly, the 10th Symposium had to be put into an appropriate historical frame. Insiders know that it was Cassius and not Marcus Aurelius, the founder of Regensburg, who inspired Svedberg to develop the ultracentrifuge, but there are some hidden connections between the venerable 27 years of history of the University and Svedberg's method: many of the grand old men from the heroic age of biophysical chemistry have been frequent guests (and even guest professors) in Regensburg, to mention only three: Heini Eisenberg, Max A. Lauffer, and Howard K. Schachman. Apart from these highlights in the grey everyday life of the faculty, there are more historical monuments. In the Institute of the hosts, the veteran of the Spinco E's in this country still survives, and two more of the old-timer generation have been in use around the clock for 25 years. The user (himself close to the age of Svedberg's ingenious first air-driven machine) enjoys his hobby-dinosaurs, and the co-organizer of the Symposium shares his enthusiasm. Not that both would not like to do comparative studies with the XL-A or XL-I, but some surprise has to be left for the next Regensburg Symposium, perhaps after another 12 years.

As in the case of the previous nine meetings, the 1997 Symposium attracted researchers from universities, research institutes, and industrial companies. The highlights which gave the 10th meeting its jubilee flavor were the keynote lectures given by Professors Donald J. Winzor and Allen P. Minton. They not only set the frame and the standards, but also gave the whole conference a very stimulating atmosphere. The organizers would like to thank both speakers for accepting the invitation and contributing to this special issue. Inviting speakers from Australia and the United States was only possible thanks to the financial support from a number of sponsors:

BASF AG, Ludwigshafen
Beckman Instruments GmbH, Munich
Biacore AB, Freiburg
Merck KGaA, Darmstadt
Pharmacia Biotech Europe GmbH, Freiburg
Regensburger Universitätsstiftung Hans Vielberth

Their generosity is gratefully acknowledged. We owe special thanks to the Regensburger Universitätsstiftung Hans Vielberth; without its help we would not have been able to organize this meeting.

The present volume of Progress in Colloid & Polymer Science contains contributions on the following topics:

Technical Innovations
Innovations in Data Analysis
Modeling
Biological Systems
Ions and Polyelectrolytes
Polymers, Colloids, Supramolecular Systems
Emulsions, Gels, and Dispersions
Interacting Systems and Assemblies

We hope that the rapid publication of the Proceedings helps to enhance the awareness of our colleagues in Physical Chemistry, Biophysics, Biochemistry and Polymer Science that a new era in the characterization of macromolecules has started with the recent renaissance of analytical ultracentrifugation in many fields of research. In this context we should like to thank the editor Dr. M. M. Nabbe for her support in preparing this volume.

Regensburg, July 1997

R. Jaenicke
H. Durchschlag

Progr Colloid Polym Sci (1997) VII

CONTENTS