

PROGRESS IN COLLOID & POLYMER SCIENCE

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

Volume 101 (1996)

Interfaces, Surfactants and Colloids in Engineering

Guest Editor:

H.-J. Jacobasch (Dresden)



STEINKOPFF
DARMSTADT



Springer

ISBN 3-7985-1057-1
ISSN 0340-255 X

Die Deutsche Bibliothek –
CIP-Einheitsaufnahme

**Interfaces, surfactants and colloids
in engineering**

/ guest ed.: H.-J. Jacobasch.
– Darmstadt : Steinkopff ;
New York : Springer, 1996
(Progress in colloid & polymer science ;
Vol. 101)
ISBN 3-7985-1057-1
NE: Jacobasch, Hans-Jörg [Hrsg.] ; GT

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© 1996 by Dr. Dietrich Steinkopff Verlag
GmbH & Co. KG, Darmstadt.

Chemistry editor: Dr. Maria Magdalene
Nabbe; English editor: James C. Willis;
Production: Holger Frey, Bärbel Flauaus.

Type-Setting: Macmillan Ltd.,
Bangalore, India

Printing: Druckhaus Beltz, Hemsbach

The 37th General Meeting of the German Colloid Society was held in Dresden from September 26 to 29, 1995. The main subject was "Interfaces, Surfactants and Colloids in Engineering." The organizers – the Institute of Polymer Research Dresden and the Dresden University of Technology – had chosen this particular title to point to the important role that interface phenomena play in technological processes.

The meeting was attended by about 230 participants from 11 countries. About 20 % of them came from industry, mainly from the chemical industry.

The meeting was inaugurated by M. J. Schwuger, chairman of the German Colloid Society. Greetings were expressed by E. Noack, undersecretary of state in the Saxon State Ministry of Science and Arts, and by A. Mehlhorn, rector of the Dresden University of Technology.

Some general thoughts on the position of science and research in society, on the tremendous challenges for research, and on the organization of scientific research in Germany were reflected in lectures by J. Treusch, president of the Hermann-von-Helmholtz Society of German Research Centres, and by V. Hertel, president of the Science Association of the Blue List Institutions (WBL).

The highlight of the opening session was the presentation of three prizes of the German Colloid Society. The Wolfgang Ostwald Prize was conferred to H. Sonntag, Berlin, for extraordinary lifetime achievement in colloid science.

The Thomas Graham Medal was bestowed upon J. Lyklema, Wageningen, for his outstanding contributions to colloid science and international cooperation in the field. The Richard Zsigmondy Scholarship for successful young colloid scientists was awarded to F. Simon, Dresden.

In the meeting 14 invited lectures, 33 contributed lectures and 80 posters were presented. They dealt mainly with theory and application aspects in the fields of preparation and stability of dispersions and emulsions, adsorption of surfactants, polyelectrolytes and neutral polymers on solid surfaces, wetting processes and electrokinetic phenomena.

Investigations on new methods to characterize interfaces, surfactants and colloids were also presented.

Quite a number of the contributions dealt with applications of basic colloid-chemical findings and methods on practical problems, such as utilization of surfactants and polymeric auxiliaries in washing processes, flocculation and duplication processes, emulsion polymerization, film formation, stability and demulsification of petroleum emulsions, polymer blends and fiber-reinforced plastics, the development of materials for medical applications (microcapsules, artificial organs), solvent extraction of heavy metals, e.g., from effluents, application of sensors, and membrane separation methods.

The papers and discussions have shown that colloid and interface science may make valuable contributions to control and optimization of processes and material properties in the above fields, and that cooperation between natural scientists and engineers as well as between academic research institutions and industrial enterprises is imperative.

However, the meeting has also shown that there remains a lot to do in the field of application-oriented colloid and interface science, e.g., development of methods to describe interface properties in multiphase materials, such as blends and reinforced plastics, application of established methods of interface characterization to real systems, i.e., physically and morphologically heterogeneous surfaces, multi-component systems, description of the effect of surfactants, polyelectrolytes and other auxiliaries on adhesion and wetting in technological processes, and investigation of process stages in the chemical and processing industries by means of methods and approaches of interface science.

German industry has a great backlog demand, especially in the last-mentioned field, and this applies both to conventional technologies such as paper and textile technology, plastics and chemical processing, and to high-tech branches like computer technology. Major advance is also necessary in the field of development of materials and processes to be used in medicine.

The 37th General Meeting of the German Colloid Society has helped to recognize problems to be solved and to start discussing approaches offered by colloid science.

I would like to thank all those who contributed to making the meeting successful. For the preparation of the scientific program, I am grateful to the members of the scientific committee: M. J. Schwuger, Jülich; Th. Wolff, Dresden; H.-J. Schulze, Freiberg; and H. Stechemesser, Freiburg. For all their efforts in the organization of the meeting, I wish to thank K. Wustrack, M. Creutz, and all the involved coworkers of the Institute of Polymer Research and of the Conference Service of the Dresden University of Technology.

Last but not least, I would like to express my thanks to all the scientists who actively contributed to the scientific program and, in particular, to those who prepared their manuscripts for publication in this volume.

Prof. Dr. H.-J. Jacobasch

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