

materials. The first of these chapters (*C. J. Brinter et al.*) is a good and simple introduction to the field. The possibility of making new devices (field effect transistors with sensor properties) is briefly, perhaps too briefly, mentioned in the next chapter. The use of TiO_2 films as photoanodes for the decomposition of water is treated in another section (*S. Sakka et al.*). It is regrettable that their potential usefulness is not compared with that of single crystal devices.

The section on boron-containing polymers is more speculative, but an interest in them as precursors to boron-nitrogen oligomers is mentioned (*S. Y. Shaw*) and the postulated mechanisms involved in the fabrication of preceramics are described (*K. J. Panorek et al.*).

Finally, a few miscellaneous metal and metalloid containing polymers are treated in the final section: metallo-tetraphenylporphyrins, poly(trisbipyridine) metal complexes, oligomeric organotin compounds, etc.

In conclusion, this book will very probably serve both as a reference book for readers familiar with this area, and as an introduction for engineers wishing to acquire a basic knowledge in this important field.

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Solid/Liquid Dispersions. Edited by *Th. F. Tadros*. Academic Press, London 1987. xii, 331 pp., bound, £ 25.—ISBN 0-12-682178-X

This book deals with the preparation, stabilization and flocculation of dispersions, and also describes their rheological properties. The material is divided into 13 chapters written by experts in the field as follows:

Chapter 1: Introduction (*T. F. Tadros*). This introductory chapter gives a short overview of the technological importance of dispersions. The reader is referred to the appropriate later chapters for further details, and a few of the results from these chapters are summarized in advance.

Chapter 2: The preparation of solid/liquid dispersions (*D. J. Walbridge*). This chapter is concerned with the preparation and stabilization of dispersions. Methods for preparing both polymeric latexes and inorganic colloids, by means of precipitation reactions or by comminution of large particles, are discussed. The basic principles of dispersing agents for aqueous and non-aqueous systems are described.

Chapter 3: The structure of the liquid/solid interface and the electrical double layer (*J. Lyklema*). This chapter deals mainly with the electrical double layer at interfaces between solid bodies and liquid media.

Chapter 4: The stability of solid/liquid dispersions (*B. H. Bijsterbosch*). This chapter is concerned with the DVLO theory, repulsive and attractive interactions between two particles, and the kinetic aspects of coagulation.

Chapter 5: Adsorption of surface-active agents at the solid/liquid interface (*E. Aveyard*). In this chapter the adsorption of surface-active agents at interfaces between solids and liquids is discussed. In particular the importance of the role played by the surface electrical charge on the particles is considered in more detail.

Chapter 6: Adsorption of polymers at the solid/liquid interface (*T. Cosgrove*). This chapter is concerned with the adsorption of polymers at the interfaces between solids and liquids. The discussion here deals mainly with the conformations of the polymers and the thickness of the adsorbed layer.

Chapter 7: The stability of solid/liquid dispersions in the presence of polymers (*B. Vincent*). In this chapter the author emphasizes the effects of adsorption on the aggregation of the dispersed particles and on the stability of dispersions.

Chapter 8: Flocculation by polymers and polyelectrolytes (*J. Gregory*). This chapter is devoted to the flocculation of dispersions by polymers and polyelectrolytes, including also a brief discussion of the thermodynamics and kinetics of flocculation.

Chapter 9: The properties of concentrated dispersions (*R. H. Ottewill*). In this chapter the author briefly describes how, on the basis of small angle neutron scattering studies, information can be obtained about the structures of concentrated dispersions; the relationship between the structure and the shear modulus of the system is also discussed.

Chapter 10: Rheology of colloidal dispersions (*J. W. Goodwin*). This chapter deals with the fundamentals of the rheological behavior of concentrated dispersions. A short overview of the various rheological phenomena is given. In addition the various measurement techniques used for characterizing the rheological behavior of concentrated dispersions are discussed in more detail.

Chapter 11: The sedimentation of suspensions and methods for preventing the formation of dilatant sediments (*T. F. Tadros*). This chapter deals with the sedimentation of dispersions and the formation or avoidance of sediments.

Chapter 12: The use of spectroscopic pK_a probes for determining electrostatic boundary potentials (*T. W. Healy, B. Lovelock and F. Grieser*). The specialized title of this chapter sets it aside from the pattern of the preceding chapters. The authors here describe how spectroscopic probes can be used to determine electrostatic boundary potentials.

Chapter 13: Summary of the properties of suspensions (*T. F. Tadros*). In this final chapter the editor summarizes the topics covered in the preceding chapters, drawing together the various macroscopic properties of dispersions.

In almost all the chapters the treatment is virtually limited to presenting the theoretical basis for the processes and phenomena described. These basic principles are often only supported by schematic diagrams. Only in comparatively rare cases is the opportunity taken to illustrate the theory by giving actual experimental results. The book is especially suitable for anyone wishing to begin work in the area of dispersions. The chapters are written clearly and simply; they do not break any new ground, i.e. almost everything

contained here can also be found in other textbooks of colloid chemistry or electrochemistry. Nevertheless, it is useful to have these fundamentals, which are essential to the theoretical understanding of dispersions, collected together in a compact form, and the book fulfills this requirement to a large extent. There is a small disadvantage arising from the fact that the individual chapters have been written by differ-

ent authors; this means that one often finds repetitions of material which is not strictly necessary for the understanding of the discussion.

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Conference Calendar

May 1989

- 16-19 **Materials Science and Technology**
Annu. Mtg. Dtsch. Gesellsch. Metallkd.
Karlsruhe (Fed. Rep. Germany)
Contact: Dtsch. Gesellsch. Metallkd., Adenauerallee 21, D-6370 Oberursel, FRG
- 16-19 **Rare-Earth Magnets and Their Applications**
10th Int. Workshop
Kyoto (Japan)
Contact: Dr. C. Herget, Sparte Anorg. Chemie, Th. Goldschmidt AG, P.O. Box 101461, D-4300 Essen 1, FRG
- 22-23 **Biosensors**
Int. Workshop
Braunschweig-Stöckheim (Fed. Rep. Germany)
Contact: Prof. R. Schmid, GBF-Bereich ETN, Mascheroder Weg 1, D-3300 Braunschweig, FRG
- 22-24 **Sol-Gel-Glasses**
52nd WE-Heraeus-Seminar
Bad Honnef (Fed. Rep. Germany)
Contact: Dr. V. Schäfer, WE-Heraeus-Stift., Heraeusstr. 12-14, D-6450 Hanau, FRG
- 22-24 **Materials Analysis**
Vienna (Austria)
Contact: Prof. Dr. M. Grassbauer, Inst. für Analytische Chem. der Techn. Univ. Wien, Getreidemarkt 9, A-1060 Wien, Austria

- 22-24 **Glass Technology**
Stuttgart (Fed. Rep. Germany)
Contact: Dtsch. Glastechn. Gesellsch., Mendelssohnstr. 75-77, D-6000 Frankfurt am Main, FRG



- 22-24 **Reinforced Plastics**
Int. Conf.
Mainz (Fed. Rep. Germany)
Contact: Dr. J.-P. Schik, Arbeitsgemeinschaft Verstärkte Kunststoffe, Am Hauptbahnhof 12, D-6000 Frankfurt am Main, FRG, Tel. (069) 27105-34, Fax (069) 23 2799

- 22-25 **Clustering and Aggregated State of Matter**
Strasbourg (France)
Contact: Prof. E. Constantin, Groupe de Recherche de Spectrométrie de Masse Interlab., Dept. de Chim., 1 rue Blaise Pascal, 67008 Strasbourg Cedex, France

- 22-25 **Graphite Intercalation Compounds**
5th Int. Symp. (ISGIC-5)
Berlin (West)
Contact: Dr. F. W. Froben, Fachbereich Physik, Freie Univ. Berlin, Arnimallee 14, D-1000 Berlin 33

- 23-25 **High- T_c Superconductivity**
Workshop
Alabama (USA)
Contact: Dr. F. Madarasz, Center for Appl. Optics, Univ. of Alabama, Huntsville, AL 35899, USA, Tel. 205/895-6030, Fax 205/895-6618

- 24-26 **Stabilization and Controlled Degradation of Polymers**
11th Int. Conf.
Lucerne (Switzerland)
Contact: Dr. A. V. Patsis, Inst. in Materials Sci, State Univ. of New York, New Paltz, NY 12561, USA

- 25-26 **Quantitative Methods in Assessment of Structural Defects**
Kansas City (USA)
Contact: A. P. Berens, Univ. of Dayton, Research Inst., 300 College Park Ave., Dayton, OH 45469, USA