

Book reviews

József Tóth, editor. Adsorption—Theory, Modelling, and Analysis (2002, Marcel Dekker, New York) 878 pp \$ 188.50; ISBN 0-8247-0747-8

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This book edited by József Tóth is Volume 107 in the renowned Surfactant Science Series. Its intention is to give a cross-section of the recent theoretical and practical results achieved in gas–solid, liquid–solid, and gas–liquid adsorption. The results are laid down in 15 chapters written by 19 contributors. All authors are well-known professors from universities across Europe, United States and Asia.

The book represents a collection of monographs which can be roughly divided into two parts: Chapters 1–9 deal mostly with gas–solid adsorption and Chapters 10–15 deal with liquid–solid adsorption.

The first chapter written by the editor of this volume presents a basic framework of the theory of physical adsorption. It is an excellent introduction to the following chapters, which are more directly dedicated to the applied aspects of adsorption phenomena. Of course, these chapters are also based on thermodynamic considerations. Therefore, it is sometimes not easy for a non-physico-chemist to read them. However, the book is valuable for all people confronted with adsorption phenomena within their daily work. And it provides also for the non-specialist a comprehensive background to understand such phenomena. For example, Chapters 14 and 15 dealing with protein adsorption are inherently important for everyone who has to formulate protein drugs and thus has to handle drug loss due to interactions with interfaces.

The book has a high scientific level. It brings together up-to-date scientific theories and research results in the field of physical adsorption. The text is well structured and clearly presented. It is supplemented by capacious bibliographic sections, which allow the reader easily to access the corresponding primary literature. The target audience of this book is wide spread and includes all people concerned with adsorption phenomena and with a sound physicochemical background. I am sure that the international community in adsorption science coming from theory and practice will highly appreciate this volume.

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Michael J. Heller and András Guttman, editors. Integrated Microfabricated Biodevices (2002, Marcel Dekker, New York) 449 pp., \$ 175. ISBN 0-8247-0606-4.

The editors of this compilation succeeded in finding more than 50 renowned specialists who agreed to give their input to this really interdisciplinary book. The result can be read in 16 chapters. Its topics are wide spread and include DNA chips, Lab-on-a-Chip, microcapillary electrophoresis systems, biosensors, and microanalytical systems.

However, this listing does not at all mean that this book only covers new bioanalytical methodologies. The contributions address all important aspects that are worth reflecting on when designing and developing such integrated biodevices. Its focus is primarily on how to realize such highly integrated bioanalytical systems. That means that this book deals very intensively with the engineering aspects of the development of these highly sophisticated devices. Thus I learned a lot about micro-lithography, micromachining, microelectromechanical systems, microfluidics, and nanotechnology while reading this book. Due to the interdisciplinary approach it defines dilution, mixing, separation, heating, and detection as integrated analytical procedures and shows how well these things can fit together.

Each chapter presents a successful case study on how to solve a special problem, e.g. Chapter 10: Active Micro-electronic Array System for DNA Hybridization, Genotyping, Pharmacogenomic, and Nanofabrication Applications. Although each individual monograph is very interesting, the charm of the book is in the sum of all contributions.

The comprehensive text is supplemented by a reasonable number of pictures and drawings which makes it much easier to imagine what is behind the described systems. The volume includes approximately 600 bibliographic citations most of them originating from the last five years. The index is carefully prepared and allows to retrieve all essential key words. What about the target group of the book? Because of

its interdisciplinary nature, it will be of interest and value for a large audience coming from industry as well as from academia. In particular it ought to be on the book shelf of anyone seriously interested in new analytical tools in the area of biology, genetics, microbiology, and clinical diagnostics. Moreover, this volume also satisfies the needs of electronic and mechanical engineers, IT specialists, physicists and mathematicians who are involved in developments within this fast-moving high-tech area. Unfortunately, the relatively high price may hinder some potential readers to buy this book spontaneously.

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