

task. Nevertheless, it must be mentioned that some aspects are missing: I would have expected to find contributions on *ab initio* molecular dynamics calculations, on cluster methods, and a separate one on the calculation of "properties". For many experimental chemists the calculation of molecular properties is of central importance.

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DNA Arrays. Methods and Protocols. Edited by *Jang B. Rampal*. (Series: Methods in Molecular Biology, Vol. 170.) Humana Press, Totowa 2001. 264 pp., hardcover \$ 89.50 (ca. € 98).—ISBN 0-896-03822-X

The aim of this book is to give an overview of the current situation in DNA microarray technology, and to provide protocols that will help new starters in the field to set up systems for DNA array analysis, even in laboratories without special facilities for such work. The research field of DNA microarrays, which is still quite new and has a large interdisciplinary element, is described in 17 chapters by authors drawn almost exclusively from industry. This reflects the commercial importance of microarray technology, which is further emphasized by a chapter giving details of the companies engaged in the field and discussing the commercial prospects. A chapter on ethical aspects discusses some of the questions that arise, such as the possibility of compulsory DNA diagnostic tests, the need for individual data protection in view of the ease with which comprehensive genetic data can be communicated electronically, and the possibility that insurance companies and employers may discriminate against higher risk groups. Other chapters dealing with more general aspects are the introduction by Edwin Southern, the brief reviews of confocal fluorescence analysis of DNA arrays, and the chapter on bioinformatics technology, which must assume a key role in the processing of the enormous quantities of raw data on hybridization analyses.

Several chapters are devoted to the preparation of nucleic acid arrays. For example, one of these describes the synthesis of DNA arrays by photolithography. It includes laboratory recipes and NMR data for phosphoramidites with photolabile protecting groups attached, reproduced from the original publications, but one may question how interesting and relevant these are from a practical standpoint, as few laboratories are likely to have facilities for the laborious photolithography. The preparation of gel-immobilized nucleic acid arrays is a simpler procedure. However, the chapters on this technique only describe the coupling chemistry involved in a very general way, and refer one to the original papers for details. Also they do not give protocols for using such arrays, but only schematic diagrams and literature references. Two chapters describe the preparation of DNA arrays by ink-jet and printing methods. Here there are detailed protocols for some of the procedures, but for the average user they are likely to be of little help, as they are very specific to the particular microdispensers and automatic plotters referred to. That criticism applies even more to the chapter on automated genotype classification using mass spectrometry equipment made by Sequenom of the USA.

Six chapters are devoted to describing practical applications of DNA arrays. They contain some useful and widely applicable protocols for the hybridization analysis of RNA and for analyzing nucleic acids by tandem hybridization; these methods could also be useful for some other related investigations. The chapter on "DNA Sequencing by Hybridization" (SBH) describes three variants of the technique, which is still under development. The purpose of the SBH method is to apply DNA arrays to study known gene sequences and mutations, or even to sequence unknown new genes. Several protocols for SBH are given. The chapter on the preparation of oligonucleotide arrays in searching for effective antisense reagents is especially useful, as it not only gives some generally applicable laboratory protocols for procedures such as the surface activation of glass supports, but also contains detailed diagrams of apparatus and reaction vessels. The chapters on applica-

tions of DNA microarrays for determining HLA types and for gene expression analysis also contain some useful experimental details.

The appearance of this book on the technology of DNA microarrays is certainly to be welcomed, as the subject is complex and very few well-proven methods are yet available. Unfortunately, however, many of the protocols given here are described in a superficial way, and would only be useful to experts who already have a detailed knowledge of the subject. The book by itself is unlikely to give readers a clear overall impression of this area of research. The arrangement of the subject matter within the chapters is not systematic, and adequate cross-references between chapters are not given. The literature coverage extends only up to 1999, and consequently does not include the most recent developments in this rapidly moving field, so that some parts of the book are already out of date. Nevertheless, it should be of interest to postgraduate students and postdoctoral researchers who have begun work on DNA arrays and need a broader view of the field, together with useful tips for solving practical problems.

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Inorganic and Organometallic Polymers. By *Ronald D. Archer*. John Wiley & Sons Inc., New York 2001. xii + 247 pp., hardcover £ 64.50.—ISBN 0-471-24187-3

This book by Ronald D. Archer reminds us that as well as organic polymers the area of inorganic and organometallic polymers is attracting increasing interest. On page 2 the author defines inorganic polymers as polymers with inorganic repeating units in the backbone, and organometallic polymers as those with a backbone alternating between a metallic element and an organic linkage. But the book also describes examples of polymeric metal complexes in which a metal forms bonds with, for example, oxygen, sulfur, or nitrogen. But these are not organometallic polymers. The author forgot to point out that a field called