

## Book Reviews

**Analytical molecular biology—quality and validation**

G.C. Saunders and H.C. Parkes (Eds.); Royal Society of Chemistry, Cambridge, 1999, 190 pages, ISBN 0-85404-472-8, £ 59.50

The technology based on DNA sequencing and organisation has revolutionised many industrial and regulatory sectors. Whereas two decades ago the analysis of DNA sequences at the gross level was limited to a select group of scientists with skills in DNA biochemistry, nowadays determination of the order of bases in short sequences is commonplace technology. DNA analysis has applications in a wide range of sciences, particularly in molecular diagnostics: forensics, food analysis, pathogen detection and clinical genetics are just a few examples. Modern kits for gene manipulation and analysis invariably employ robust protocols that may obscure the paramount importance of the meticulous attention to detail necessary to achieve repeatable and accurate results on the micro-scale on which experiments are conducted. There is a need to be familiar with all the key procedures in DNA analysis to ensure that not only are results obtained, but that they are also both precise and accurate.

*Analytical Molecular Biology—Quality and Validation* introduces the issues of validation and quality in relation to DNA-based analyses. Factors that can influence the validity of such analyses and the production of quality data are examined in detail. Successive chapters deal with DNA extraction and total DNA quantification and various aspects of the Polymerase Chain Reaction (PCR), random amplified polymorphic DNA analysis and the development of multiplex PCR, membrane hybridisation and automated DNA cycle sequencing. Great emphasis is placed on understanding factors that can lead to unwanted variance in results. This includes the additional challenges associated with the analysis of real samples such as forensic specimens or complex foods in which DNA degradation can occur. Information is collated from a wide variety of sources and includes much constructive advice.

This book is extremely well laid out and presented, providing an authoritative guide to many aspects of DNA analysis. It is highly recommended not only for anyone in the bioanalytical community involved in DNA analysis, but also for scientists from a wide variety of disciplines seeking to acquire a deeper understanding of a fascinating subject.

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**Experimental Methods in Polymer Science**

T. Tanaka (Ed.); Academic Press, San Diego, 2000, 604pages, ISBN 0-12-683265-X, £59.95

In the new millennium, polymers are some of the most important materials from scientific, technological and economic standpoints. Despite advances during the last few decades in polymer science, materials science and engineering and biotechnology, the knowledge required to design polymers is far from complete. Nature's biopolymers, life's molecular machinery, are well ahead of the most sophisticated synthetic polymers. The chemical, pharmaceutical, medical and many other industries depend on progress in the development and characterisation of polymer systems. To maximise the efficiency and cost effectiveness of the performance and utilisation of such polymer systems, we need to understand and employ the most modern methods of characterisation.

*Experimental Methods in Polymer Science* describes the most important practical techniques for experimental research in polymer science. Successive chapters cover light scattering, neutron scattering, fluorescence spectroscopy, NMR spectroscopy, mechanical spectroscopy and polymer hydrogel phase transitions. Each chapter deals with principles, practical techniques and examples of real applications. Students and researchers alike can use the volume as a handbook: it is a consolidation of experimental methods into a single source.

This book is well documented and well laid out with clear illustrations. It is highly recommended for scientists and engineers who wish to carry out experimental research using the most modern methods, as well as a one-stop laboratory manual for student or researcher.

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