

M.J. Duer, editor. Introduction to Solid-State NMR Spectroscopy, Blackwell Publishing Ltd, Oxford, UK, 2004 (xiv + 349 pp., £29.99, ISBN 1-4051-0914-9)

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Solid-state nuclear magnetic resonance (NMR) is gaining widespread acceptance as an important method in the characterizing of solid-state form and the understanding of structure in the solid state. This method is a very sensitive reporter of molecular conformation, mutual interaction, dynamics and form. The excellent feature of solid-state NMR is that it can be used effectively even in inhomogeneous or amorphous systems. The chemistry of today and the future has lot to do with heterogeneous (solid) systems. Polymers are obvious example. New polymer materials involve the mixing of the desired material properties. Solid-state NMR can serve as a very important tool and can give huge amounts of information on such systems.

The book addresses the various aspects of solid-state NMR spectroscopy. The descriptions of different topics are also backed by mathematical explanations. The book opens with the chapter on basics concepts of NMR and essential techniques for solid-state NMR, such as magic-angle spinning, heteronuclear decoupling, homonuclear decoupling, cross-polarization and echo-pulse sequences are discussed in the subsequent chapter.

The interaction of the secondary field produced by the electrons with the nucleus is the shielding interaction and the frequency shift that this interaction causes in an NMR spectrum is the chemical shift. The theory and uses of shielding and chemical shift are summarized in chapter 3. Nuclear spin possesses a magnetic moment and in a collection of spins, these interact through, which is called dipole–dipole or dipolar coupling. The detailed description about the theory and uses of dipolar coupling and quadrupole coupling is given in the proceeding chapters.

Many bulk material properties are dependent on the flexibility and degrees of freedom of the underlying molecules and this phenomenon has created a huge interest in molecular motions in solids. Chapter 6 of the book addresses this important aspect and summarizes the various NMR techniques for studying molecular motion in solids.

This book has covered all the necessary information on solid-state NMR spectroscopy and it can serve as a guideline for all the persons, which are working in this very interesting and exciting branch of spectroscopy. We hope this book would not only be useful for the academic purposes, but also for research purposes as well, where solid-state NMR is likely to be a major investigative technique.

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S.E. Harding, editor. Biotechnology and Genetic Engineering, Vol. 21, Intercept Ltd, Dorset, UK, 2004 (xii + 377 pp., £120.00, ISBN 1-898298-91-2)

Man has exploited biotechnology for thousands of years in various activities, however, the discovery of genetic engineering techniques is responsible for the current 'biotechnology boom' and has doubtless been the main cause of much recent publicity of biotechnology. Not only these techniques offer the prospect of improving existing processes and products, but they are also enabling us to develop totally new products, which were not previously possible.

This book gives an overview of recent issues and techniques in biotechnology and genetic engineering. The application of power ultrasound to biomolecular crystallization and application of small molecule chemical probes in biological systems are discussed in the first part of the book. The HIV kills more people worldwide than any other infectious disease. The development of microbicides seems to be most promising approach for the prevention of HIV transmission. Polymers, being the potent candidates for HIV microbicides, different polymers and their derivatives are currently being evaluated for their potential use.

Pharmaceutical and biopharmaceutical applications of polymers and polymeric systems are widespread, due to the variety of their structures and functionality. Polymeric devices have been found to enhance both the stability of biopharmaceuticals and their delivery profile. Different polymeric delivery systems for biopharmaceuticals have been reviewed in this book.

The issues of starch retrogradation and redesigning lignin for industry and agriculture have been addressed under plant biotechnology part of the book. The later review presents the current status of research into biosynthesis and manipulation of lignin, focussing particularly on the impact in controlling lignin quality for industrial applications such as wood pulping.

The final part of the books deals with the economics and safety issues. The use of recombinant DNA techniques to engineer food crops with novel traits has aroused tremendous interest and concern throughout the world. The science-based critique of corporate scientific practices and US regulatory system with respect to genetically engineered foods is given in the book. Different tools and

techniques in the design of safe and biologically contained transgenic plants have been summarized in the concluding chapter of the book.

The technology and theories behind different recent bioprocesses are clearly explained in this volume and this can serve as an excellent source of information for all individuals interested in the application of biotechnology and genetic engineering in the production of novel products.

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F. Gaedcke, B. Steinhoff and H. Blasius, editors. Herbal Medicinal Products, Medpharm, Stuttgart, Germany, CRC Press, Boca Raton, USA, 2003 (xiii + 177 pp., \$47.96, ISBN 3-88763-098-X and ISBN 0-8493-1023-7)

Herbal medicinal products are becoming more widely accepted as alternatives to medicinal prescriptions, due to growing awareness among peoples towards health and natural therapies. According to a study on the use of natural medicines which is performed regularly by German Institute of Demoscopy Allensbach, about two-thirds of German population prefer medicines from natural resources to chemically defined medicines.

There are often uncertainties about the interpretation of basic terms related to manufacture, quality and correct labelling of herbal medicinal products. This book on Herbal Medicinal Products clarifies these uncertainties, increasing transparency in the herbal medicinal products market and supporting an adequate scientific discussion related to herbal medicinal products. The book has 11 colour photographs, 37 figures and 30 tables. After a compilation of basic definitions, it describes the rules for correct labelling of herbal drug preparations in the subsequent chapter.

In the case of herbal medicinal products, the herbal drug or herbal drug preparation in its entirety represents the active substance. The quality of the herbal active substance must be assured in a way that consistent therapeutical success is guaranteed from batch to batch. Chapter 3 of the book focuses on this important aspect, i.e. quality assurance of herbal medicinal products, which include quality assurance of herbal starting material, herbal extract

and the finished herbal medicinal product. The legal provisions relating quality and safety of herbal medicinal products are discussed in the individual chapters.

An overview of the European marketing authorisation system is given in chapter 5, which covers the topics on directives relating to medicinal products, centralised, decentralised and national procedure, herbal medicinal working party and future of marketing authorisation. The book provides summarized information on the herbal medicinal products worldwide in the concluding chapter. The activities of the World Health Organization in relation to herbal medicines are also addressed.

It is hoped that this book may serve as a guideline for pharmacists, drug experts, students and all concerned with herbal medicinal products in industry, research, universities, regulatory offices and health authorities. It can also serve as a practical handbook for the qualitative assessment of individual products in pharmacies and medical practice.

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N.J. Russell and G.W. Gould, editors. Food Preservatives 2nd Ed., Kluwer Academic/Plenum Publishers, New York, USA, 2003 (xv + 380 pp., £99.00, ISBN 0-306-47736-X)

The preservation of food has been carried out by man using various means for many hundreds of years in order to ensure a supply between growing seasons. Developments in food processing also have an influence on the use of food preservatives. As demand has increased for a wider range of different, often processed products, and with longer shelf-lives, chemical preservatives have become widely used. Different preservatives achieve best results under different conditions, so the food industry has the opportunity to select the most appropriate preservative for the function required. However, the current trend is to use minimal use of chemically preservative, which has implications for the storage and safety of food products.

The problems in food preservation may be caused by wide range of reactions such as physical, chemical, enzymatic and microbiological. These various reactions are, therefore, targets for effective food preservation. They may be prevented or minimized by a range of formulation,