

NMR IN LIVING SYSTEMS.

T. Axenrod, G. Ceccarelli, Eds. Dordrecht, The Netherlands, D. Reidel Publishers, 1986, \$54.00, 410 pp

This book is based on the lectures delivered at the NATO Advanced Institute held in Altavilla Milicia (Sicily), Italy in September 1984. It has 25 chapters. The basic concepts of nuclear magnetic resonance (NMR) are covered in the first few chapters. More advanced topics dealing with imaging, in vivo spectroscopy, and determinations of cation concentrations in living systems are covered in the subsequent chapters. Also, it includes some interesting nonmedical NMR applications and other imaging modalities.

It is very difficult to provide an in-depth coverage for a very diverse and interdisciplinary field like NMR in living systems. It is the feeling of this reviewer, however, that some of the topics did not receive the in-depth coverage they deserve. For instance, one of the most important topics like basic theory of NMR imaging and comparison of different imaging techniques should have been covered in greater detail. Some of the chapters are less than ten pages long. Not accidentally, some of the best written chapters are among the longest.

As was pointed out in the preface, the last ten years have witnessed a tremendous progress in the imaging and spectroscopic application of NMR to the living systems and there is clearly a need for a book of this type. Because of rapid developments in this field, understandably this book did not include the latest developments like image based localization methods, fast imaging techniques and imaging of nuclei other than protons.

The book was printed on a good quality paper and the figures are reasonably clear. There are, however, a large number of typographical errors and some of the figures are mislabeled. At least one figure is missing (Chapter 10).

In summary, this book does a reasonable job of covering a large number of topics dealing with NMR in living systems and has a place in all the NMR research laboratories. Though it does not provide an in-depth coverage, it does make the intelligent novices aware of the various potentials of NMR as applied to living systems. It is therefore suitable for anyone contemplating entering this field.

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ANALYTICAL AND CHROMATOGRAPHIC TECHNIQUES IN RADIOPHARMACEUTICAL CHEMISTRY.

D. M. Wieland, M. C. Tobes, T. J. Mangner, Eds. New York, Springer-Verlag, 1986, 300 pp, \$49.50

Radiopharmaceutical control and development requires the characterization of radiochemical entities which is ultimately

dependent on the choice of suitable chromatographic methods. This book is a complete treatise of chromatography written for the radiopharmaceutical scientist. The text contains updated and expanded versions of presentations from a June, 1984, symposium sponsored by the Radiopharmaceutical Sciences Council of The Society of Nuclear Medicine. The editors and authors are prominent American radiopharmaceutical scientists.

This is a hard-back book with a type-set text. Understanding is facilitated by clearly illustrated figures and appropriate tables. All contributions are thoroughly referenced and the text is well indexed. The editors have achieved a high degree of continuity that is seldom found in a symposium proceedings. There is a consistent format for each paper.

This book is divided into three parts. The first section contains four chapters which address all aspects of thin layer chromatography (TLC). Topics include high performance TLC evaluated by scanning densitometry, a review of radio-analytical techniques using TLC and electrophoresis for common radiopharmaceuticals, performance and design of radio-TLC imaging systems, and the application of position-sensitive wire chambers to these methods.

The second section contains a description of high pressure liquid chromatography (HPLC) techniques and instrumentation. The initial chapter presents a lucid review of HPLC theory and components of radio-HPLC systems. Other topics include approaches to quantitation of HPLC samples and design of flow-detector systems.

The final section contains six chapters describing applications of chromatographic techniques to organic molecules and metal chelates (particularly technetium-99m drugs), metabolic tracer studies, ultra-short lived radiotracers, and radiolabeled antibodies. This section is particularly valuable because the authors lead us through the decision-making process in selection and application of methods to representative compounds.

The educational level of this book is advanced and it is more appropriate as a library resource in the teaching institution. It is an exceedingly useful reference for anyone with a serious interest in radiochromatographic techniques. It will be the authoritative text for this subject matter in the near future.

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POSITRON EMISSION TOMOGRAPHY AND AUTORADIOGRAPHY—PRINCIPLES AND APPLICATIONS FOR THE BRAIN AND HEART.

M. E. Phelps, J. C. Mazziotta, H. R. Schelbert, Eds. New York, Raven Press, 1986, 690 pp, \$89.50

This book is a research compendium for positron emission tomography (PET) and autoradiography covering the current and not-so-current aspects of quantitation, modeling, and