a better understanding of phenomena at the molecular level would improve our ability to develop new products and the quality of existing ones.

C.J. Knill, J.F. Kennedy*
Birmingham Carbohydrate & Protein Technology Group, School of Chemistry, The University of Birmingham, Birmingham B15 2TT, UK

* Corresponding author. Tel: + 44-121-414-7029; fax: + 44-121-414-7030.
E-mail address: jfkennedy@chemistry.bham.ac.uk (J.F. Kennedy)

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***Spectroscopic Methods in Organic Chemistry*; M. Hesse, H. Meier, B. Zeeh (Translated by A. Linden and M. Murray); George Thieme Verlag, Stuttgart, 1997, viii + 365 pages, ISBN 3-13-106061-1, DM 168.00**

The development of spectroscopic methods facilitated elucidation of functional groups, and in some cases complete structures, of previously unknown materials, and replaced many of the laborious analysis of degradation products techniques employed previously. This comprehensive volume is part of the *Foundations of Organic Chemistry Series* and is a translation of the fifth German edition. Each new edition is thoroughly updated so that it describes the current state of the art in spectroscopic methods. It is divided into five large chapters that detail UV–Vis spectroscopy, infrared and Raman spectroscopy, nuclear magnetic resonance spectroscopy, mass spectra, and combined examples, respectively.

Individual chapters are well structured and provide a good balance of fundamental principles, practical information (sample preparation and instrumentation information) and detailed information on the spectral features of functional groups. All chapters are subdivided into relevant sections, e.g. the chapter covering UV–Vis spectroscopy is divided into sections covering; theoretical introduction, sample preparation and measurement of spectra, chromophores, applications of UV–Vis spectroscopy, derivative spectroscopy, and chirooptical methods. This volume contains over 200 figures and 100 tables, the latter of which provide a wealth of information regarding observed signals from specific functional groups and hence are invaluable with respect to spectral interpretation.

Spectroscopic Methods in Organic Chemistry is designed to be a supplementary textbook and aims to provide the reader with comprehensive knowledge of such spectroscopic techniques and particularly to address the way one should approach the analysis of unknown compounds using such techniques. It contains an abundance of extremely useful information and is therefore highly recommended for all individuals involved in any research requiring the characterisation of organic compounds and hence the interpretation of spectroscopic data.

C.J. Knill, J.F. Kennedy*
Birmingham Carbohydrate & Protein Technology Group, School of Chemistry, The University of Birmingham, Birmingham B15 2TT, UK

* Corresponding author. Tel: + 44-121-414-7029; fax: + 44-121-414-7030.
E-mail address: jfkennedy@chemistry.bham.ac.uk (J.F. Kennedy)

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***Polymer Synthesis and Characterization: A Laboratory Manual*; S.R. Sandler, W. Karo, J.-A. Bonesteel, E.M. Pearce (Eds.); San Diego: Academic Press, 1998, xvii + 212 pages, ISBN 0-12-618240-X, $39.95**

Polymer science is an extremely important and vast area of scientific interest. This laboratory manual provides a comprehensive introduction to an array of important techniques that are representative of a wide variety of polymerisation and characterisation methods. The experiments are designed to be completed in one laboratory period, using limited quantities of materials to reduce costs and disposal problems, and were reviewed for classroom use at undergraduate level.

The manual is divided into two large sections, namely, polymer synthesis and polymer characterisation. The polymer synthesis section is further divided into six subsections that cover the polymerisation of styrene, acrylic esters, polyamides, polyesters, epoxy resins and vinyl acetate, respectively. The majority of these subsections contain more than one experimental protocol, giving a total of 12 protocols in the polymer synthesis section. The polymer characterisation section contains 11 detailed experimental protocols that cover a broad range of analytical and instrumental techniques. Techniques covered include nuclear magnetic resonance (NMR), infrared (IR) spectroscopy, thermogravimetric analysis (TGA), differential scanning calorimetry (DSC), dilute solution viscosity, gel permeation chromatography (GPC), light scattering, end group analysis, X-ray diffraction, optical microscopy and dynamic mechanical analysis (DMA). Many of the analytical techniques discussed can also be applied to the characterisation of natural polymers.

This volume combines the extensive industrial and teaching experience of the authors and introduces the user to the concept of “Good Manufacturing Practice”. Numerous references are included throughout for more advanced students, technicians and researchers. It is assumed that the reader is already familiar with the basics of organic chemistry and has some knowledge of the mechanisms of

the various polymer reactions that are illustrated by the preparations presented.

'Polymer Synthesis and Characterisation' will serve as a unified laboratory manual for university courses, as well as for professional training courses in polymer science. Students will benefit from the clear writing style and straightforward approach to concepts and procedures, while more advanced readers will appreciate the emphasis on fundamental principles and references to more in-depth explanations of the techniques.

C.J. Knill, J.F. Kennedy
Birmingham Carbohydrate & Protein Technology Group, School of Chemistry, The University of Birmingham, Birmingham B15 2TT, UK

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