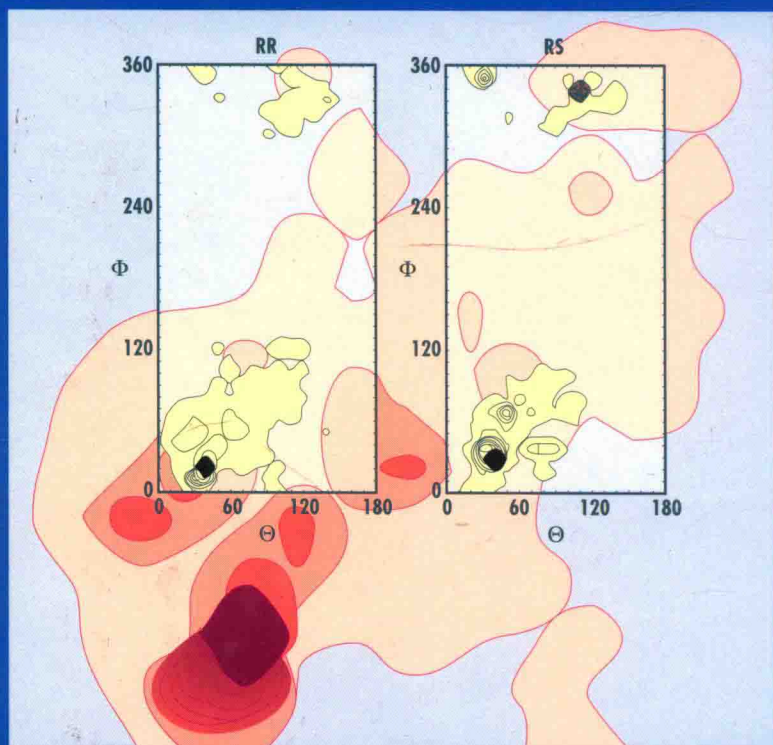


Chiral Separation Techniques

A Practical Approach

Edited by G. Subramanian

Second, completely revised and updated edition



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 **WILEY-VCH**

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Dr. Ganapathy Subramanian
60B Jubilee Road
Littlebourne
Canterbury
Kent CT3 1TP, UK

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Preface

During the past two decades there has been intense interest in the development and application of chiral chromatographic methods, particularly in the pharmaceutical industries. This is driven both by desire to develop and exploit “good science” and by the increasing pressure by regulatory authorities over the past ten years against the marketing of racemic mixtures. The regulation of chiral drug provides a good demonstration of the mutual relationship between progress in scientific methodology and regulatory guidelines. It has also provided a common platform in establishing good understanding between international regulatory authorities and pharmaceutical industries, leading to a consensus in recognition of the global nature of pharmaceutical development. This has provided a great challenge for the industries to seek techniques that are efficient, economical and easy to apply, in the manufacture of enantiopure products.

The versatility of chiral stationary phases and its effective application in both analytical and large-scale enantioseparation has been discussed in the earlier book ‘*A Practical Approach to Chiral Separation by Liquid Chromatography*’ (Ed. G. Subramanian, VCH 1994). This book aims to bring to the forefront the current development and successful application of chiral separation techniques, thereby providing an insight to researchers, analytical and industrial chemists, allowing a choice of methodology from the entire spectrum of available techniques.

I am indebted to the leading international group of contributors, who have agreed to share their knowledge and experience. Each chapter represents an overview of its chosen topic. Chapter 1 provides an overview of techniques in preparative chiral separation, while Chapter 2 provides an account on method development and optimisation of enantiomer separation using macrocyclic glycopeptide chiral stationary phase. Combinatorial approach and chiral base applications are discussed in Chapters 3 and 4. Chapter 5 details the development of membranes for chiral separation, while Chapter 6 gives an overview of implanting techniques for enantiopurification. Non-chromatographic solid-phase purification of enantiomers is explained in Chapter 7, and Chapter 8 discusses modeling and simulation of SMB and its application in enantioseparation. A perspective on cGMP compliance for preparative chiral chromatography is discussed in Chapter 9, and Chapter 10 provides an account of electrophoretically driven preparative chiral separation and sub- and supercritical fluid

chromatography for enantioseparation is explained in Chapter 11. An insight into International Regulation of chiral drugs is provided in Chapter 12.

It is hoped that the book will be of value to chemists and chemical engineers who are engaged in the manufacture of enantiopure products, and that they will successfully apply some of the techniques described. In this way, an avenue will be provided for further progress to be made in this important field.

I wish to express my sincere thanks to Steffen Pauly and his colleagues for their enthusiasm and understanding in the production this book.

Canterbury, Kent, UK
April, 2000

G. Subramanian

List of Authors

Thomas E. Beesley
Advanced Separation Technologies, Inc.
37 Leslie Court
P. O. Box 297
Whippany, NJ 07981
USA

Jerald S. Bradshaw
Department of Chemistry and
Biochemistry
Brigham Young University
Provo, UT 84602
USA

Sarah K. Branch
Medicines Control Agency
Market Towers
1 Nine Elms Lane
London SW8 5NQ
UK

Y. L. Bruenning
IBC Advanced Technologies, Inc.
856 East Utah Valley Drive
P. O. Box 98
American Fork, UT 84003
USA

Jean M. J. Fréchet
Department of Chemistry
University of California
736 Latimer Hall
Berkeley, CA 94720-1460,
USA

Ingolf Heitmann
ENSSPICAM
University Aix-Marseille III
Avenue Escadrille Normandie-Niemen
13397 Marseille Cedex 20
France

Neil E. Izatt
IBC Advanced Technologies, Inc.
856 East Utah Valley Drive
P. O. Box 98
American Fork, UT 84003
USA

Reed M. Izatt
Department of Chemistry and
Biochemistry
Brigham Young University
Provo, UT 84602
USA

M. F. Kemmere
Process Development Group
Department of Chemical Engineering
and Chemistry
Eindhoven University of Technology
P. O. Box 513
5600 MB Eindhoven
The Netherlands

Jos T.F. Keurentjes
Process Development Group
Department of Chemical Engineering
and Chemistry
Eindhoven University of Technology
P. O. Box 513
5600 MB Eindhoven
The Netherlands

K. E. Krakoviak
IBC Advanced Technologies, Inc.
856 East Utah Valley Drive
P. O. Box 98
American Fork, UT 84003
USA

J. T. Lee
Advanced Separation Technologies, Inc.
37 Leslie Court
P. O. Box 297
Whippany, New Jersey 07981
USA

Christina Minguillón
Laboratory Química Farmacia
Facultat de Farmacia
University of Barcelona
E-08028 Barcelona
Spain

Roger M. Nicoud
Novasep SAS
15, Rue du Bois de la Champelle
Parc Technologique de Brabois
B. P. 50
54502 Vandoeuvre-lès-Nancy Cedex,
France

Luís S. Pais
Laboratory of Separation and Reaction
Engineering
Faculty of Engineering
University of Porto
Rua dos Bragas
4050-123 Porto
Portugal

Scott R. Perrin
Novasep Inc.
480 S. Democrat Road
Gibbstown, NJ 08027-1297
USA

Karen W. Phinney
Analytical Chemistry Division
Chemical Science and Technology
Laboratory
National Institute of Standards and
Technology
100 Bureau Drive, Stop 8392
Gaithersburg, MD 20899-8392
USA

Johanna Pierrot-Sanders
ENSSPICAM
University Aix-Marseille III
Avenue Escadrille Normandie-Niemen
13397 Marseille Cedex 20
France

Patrick Piras
ENSSPICAM
University Aix-Marseille III
Avenue Escadrille Normandie-Niemen
13397 Marseille Cedex 20
France

Alírio E. Rodrigues
Laboratory of Separation and Reaction
Engineering
Faculty of Engineering
University of Porto
Rua dos Bragas
4050-123 Porto
Portugal

Christian Roussel
ENSSPICAM
University Aix-Marseille III
Avenue Escadrille Normandie-Niemen
13397 Marseille Cedex 20
France

Michael Schulte
Merck KGaA,
SLP Fo BS
Frankfurter Str. 250
D-64271 Darmstadt
Germany

Börje Sellergren
Department of Inorganic Chemistry and
Analytical Chemistry
Johannes Gutenberg University
Duesbergweg 10-14
55099 Mainz
Germany

Apryll M. Stalcup
Department of Chemistry
University of Cincinnati
P. O. Box 210172
Cincinnati, OH 45221-0172
USA

Ganapathy Subramanian
60 B Jubilee Road
Littlebourne
Kent CT3 1TP
UK

Frantisek Svec
Department of Chemistry
736 Latimer Hall
University of California
Berkeley, CA 94720-1460
USA

Andy X. Wang
Advanced Separation Technologies, Inc.
37 Leslie Court
P. O. Box 297
Whippany, NJ 07981
USA

Dirk Wulff
Department of Chemistry
University of California
736 Latimer Hall
Berkeley, CA 94720-1460
USA

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