

25

Advances in Biochemical Engineering

Managing Editor: A. Fiechter

Chromatography

With Contributions by
H.-J. Böhme, P. Hedman, E. Hofmann,
J.-C. Janson, G. Kopperschläger,
G.T. Tsao, C.-M. Yang

With 41 Figures and 32 Tables



Springer-Verlag
Berlin Heidelberg New York 1982

ISBN 3-540-11829-2 Springer-Verlag Berlin Heidelberg New York
ISBN 0-387-11829-2 Springer-Verlag New York Heidelberg Berlin

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically those of translation, reprinting, re-use of illustrations, broadcasting, reproduction by photocopying machine or similar means, and storage in data banks. Under § 54 of the German Copyright Law where copies are made for other than private use, a fee is payable to „Verwertungsgesellschaft Wort“, Munich.

© by Springer-Verlag Berlin · Heidelberg 1982
Library of Congress Catalog Card Number 72-152360
Printed in GDR

The use of registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

2152/3020-543210

Managing Editor

Professor Dr. A. Fiechter
Institut für Biotechnologie
Eidgenössische Technische Hochschule,
Hönggerberg,
CH-8093 Zürich

Editorial Board

- Prof. Dr. *S. Aiba* Department of Fermentation Technology, Faculty of Engineering, Osaka University, Yamada-Kami, Suita-Shi, Osaka 565, Japan
- Prof. Dr. *B. Atkinson* University of Manchester, Dept. Chemical Engineering, Manchester/England
- Prof. Dr. *E. Bylinkina* Head of Technology Dept., National Institute of Antibiotika, 3a Nagatinska Str., Moscow M-105/USSR
- Prof. Dr. *Ch. L. Cooney* Massachusetts Institute of Technology, Department of Chemical Engineering, Cambridge, Massachusetts 02139/USA
- Prof. Dr. *H. Dellweg* Techn. Universität Berlin, Lehrstuhl für Biotechnologie, Seestraße 13, D-1000 Berlin 65
- Prof. Dr. *A. L. Demain* Massachusetts Institute of Technology, Dept. of Nutrition & Food Sc., Room 56-125, Cambridge, Mass. 02139/USA
- Prof. Dr. *S. Fukui* Dept. of Industrial Chemistry, Faculty of Engineering, Sakyo-Ku, Kyoto 606, Japan
- Prof. Dr. *K. Kieslich* Wissenschaftl. Direktor, Ges. für Biotechnolog. Forschung mbH, Mascheroder Weg 1, D-3300 Braunschweig
- Prof. Dr. *R. M. Lafferty* Techn. Hochschule Graz, Institut für Biochem. Technol., Schlögelgasse 9, A-8010 Graz
- Prof. Dr. *K. Mosbach* Biochemical Div., Chemical Center, University of Lund, S-22007 Lund/Sweden
- Prof. Dr. *H. J. Rehm* Westf. Wilhelms Universität, Institut für Mikrobiologie, Tibusstraße 7-15, D-4400 Münster
- Prof. Dr. *P. L. Rogers* School of Biological Technology, The University of New South Wales, PO Box 1, Kensington, New South Wales, Australia 2033
- Prof. Dr. *H. Sahn* Institut für Biotechnologie, Kernforschungsanlage Jülich, D-5170 Jülich
- Prof. Dr. *K. Schügerl* Institut für Technische Chemie, Universität Hannover, Callinstraße 3, D-3000 Hannover
- Prof. Dr. *H. Suomalainen* Director, The Finnish State Alcohol Monopoly, Alko, P.O.B. 350, 00101 Helsinki 10/Finland
- Prof. Dr. *S. Suzuki* Tokyo Institute of Technology, Nagatsuta Campus, Research Laboratory of Resources Utilization 4259, Nagatsuta, Midori-ku, Yokohama 227/Japan
- Prof. Dr. *H. Taguchi* Faculty of Engineering, Osaka University, Yamada-kami, Suita-shi, Osaka 565/Japan
- Prof. Dr. *G. T. Tsao* Director, Lab. of Renewable Resources Eng., A. A. Potter Eng. Center, Purdue University, West Lafayette, IN 47907/USA

Table of Contents

Packed-Bed Adsorption Theories and Their Applications to Affinity Chromatography C.-M. Yang, G. T. Tsao	1
Affinity Chromatography C.-M. Yang, G. T. Tsao	19
Large-Scale Chromatography of Proteins J.-C. Janson, P. Hedman	43
Cibacron Blue F3G-A and Related Dyes as Ligands in Affinity Chromatography G. Kopperschläger, H.-J. Böhme, E. Hofmann	101
Author Index Volumes 1—25	139