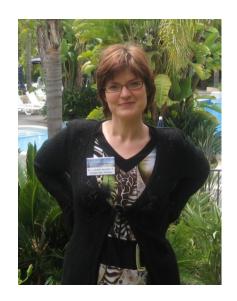
## MEMBRANE BIOREACTORS

### **Models for Bioprocess Design**

# by Anna Trusek-Holownia

Process intensification in a microbiological membrane bioreactor is due, first of all, to the concentration of bacterial biomass. In an enzymatic membrane bioreactor this is achieved by immobilization, and consequently multiple use of the enzyme which, depending on its activity, can remain in the membrane bioreactor either in a native form or can be bound with the membrane. Additionally, a properly selected membrane and method of transmembrane mass transport can replace a multi-stage, often complicated and costly, process of reagent separation used in traditional technologies.

A description of the membrane bioreactor in this book helps to minimize costs of membrane bioreactor application. This must be preceded by proper familiarity with the process and identification of parameters which affect the operation of a membrane bioreactor.



#### **Anna Trusek-Holownia**

Ph.D., D.Sc., born in Wroclaw, Poland, in 1972.

Since 1995 she has carried out scientific work receiving an M.A. degree in biotechnology, and Ph.D. and D.Sc. in chemical engineering. She is an Assistant Professor in the Division of Chemical and Biochemical Processes in the Department of Chemistry, Wroclaw University of Technology. She is a member of the European Membrane Society and the Federation of Biotechnology.

For 15 years she has carried out research on the applications of native and immobilized enzymes and microorganisms

in production processes and wastewater treatment technologies. She carries out her studies with the use of classical bioreactors and bioreactors integrated with membrane processes, both in the laboratory and on a pilot-plant scale. She has dedicated most of her investigations to the application of a membrane contactor in enzymatic synthesis of hydrophobic products, applicability of a bioreactor with a catalytic membrane to enantioselective enzymatic hydrolysis and biodegradation of organic pollutants in industrial effluents in MBM.



**Balaban Desalination Publications** 

#### PLEASE ENTER MY ORDER FOR

# MEMBRANE BIOREACTORS

### **Models for Bioprocess Design**

#### by Anna Trusek-Holownia

ISBN 0-86689-070-X

Please send me copy(ies) at €89 (or \$ equivalent) per copy				
Payment in the amount of € by cre	dit card	□ Visa	☐ MasterCard	
Card No		Exp. date		
Cardholder name	Security code			
Signature			····	
Name				
Address			<del> </del>	
Country	Email			
Tel	Fax		<del> </del>	
Date				

#### PLEASE SEND TO:

Miriam Balaban
Desalination Publications
Tel. +39 348 3348406
eFax +1 928 5433066
DesalinationPublications@yahoo.com

#### PAYMENT BY BANK TRANSFER TO:

Account Name: Miriam Balaban

Account N°: 10849.36

Bank: Monte dei Paschi di Siena

67100 L'Aquila, Italy ABI: 01030 CAB: 03600

Swift Code: PASCITMMAQU

IBAN Code: IT 92 I 01030 03600 000001084936