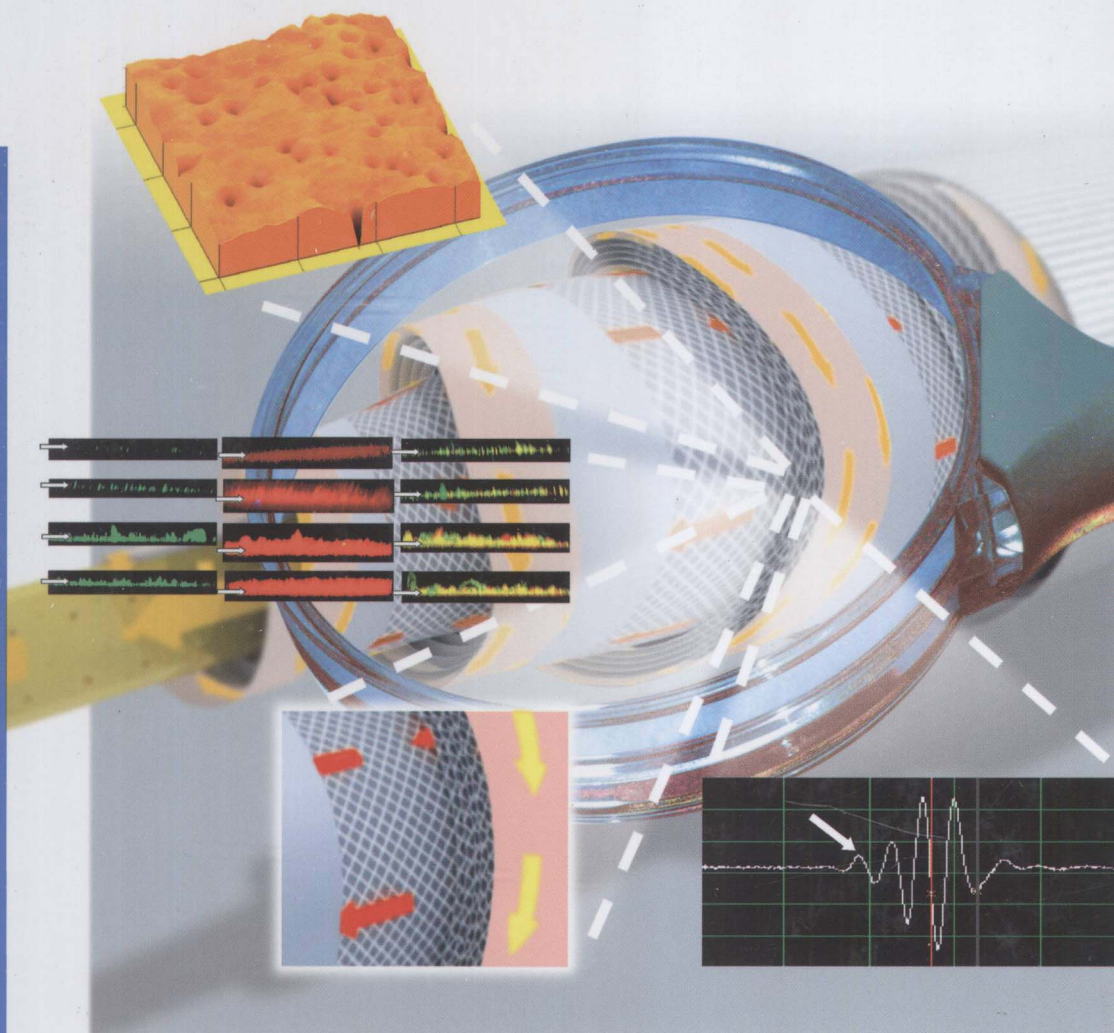


Edited by Carme Güell,
Montserrat Ferrando, Francisco López

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Monitoring and Visualizing Membrane- Based Processes



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Edited by

*Carme Güell, Montserrat Ferrando,
and Francisco López*



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The Editors

Dr. Carme Güell

University Rovira i Virgili
Department d'Enginyeria Química
Campus Sescelades
Avda Països Catalans 26
45007 Tarragona
Spain

Dr. Montserrat Ferrando

University Rovira i Virgili
Department d'Enginyeria Química
Campus Sescelades
Avda Països Catalans 26
45007 Tarragona
Spain

Dr. Francisco López

University Rovira i Virgili
Department d'Enginyeria Química
Campus Sescelades
Avda Països Catalans 26
45007 Tarragona
Spain

Cover illustration

The membrane module image was kindly provided by Alfa Laval Corporate AB.

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Library of Congress Card No.: applied for

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

Bibliographic information published by the Deutsche Nationalbibliothek

Die Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>

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Printed in the Federal Republic of Germany
Printed on acid-free paper

Cover design Adam Design, Weinheim

Typesetting Macmillan Publishing Solutions, Bangalore, India

Printing Strauss GmbH, Mörlenbach

Bookbinding Litges & Dopf GmbH, Heppenheim

ISBN: 978-3-527-32006-6

Preface

Increasing interest in the use of membranes and membrane-based processes in many kinds of industries, and the interesting prospects that they offer for the near future, has resulted in a need to improve our knowledge, both on the processes themselves and also on the main “driving force” of those technologies, which are the membranes. During three days in October 2006, researchers from all over the world met in Tarragona (Spain) to discuss and present their experiences and expertise, within the frame of a workshop on the characterization and use of monitoring techniques applied to membrane processes. The workshop served as the initiation site for this book. All presenters, and some other researchers who could not participate at that moment, have collaborated in the preparation of the book. We would like to have a very special memory for Dr. Frank Reineke, who engaged in the project with great enthusiasm, making a great contribution during the workshop and who unfortunately passed away a few months after.

This book follows the same structure proposed for the workshop, with a first part devoted to microscopic techniques, a second part for electrical, laser and acoustic techniques and a third part on some examples of monitoring techniques applied to membrane processes, with a special emphasis on membrane bioreactors, which has become a very relevant application. Each chapter of the book offers the reader a basic introduction to the specific characterization and/or monitoring technique, followed by selected examples showing its capabilities, strengths and weaknesses, if any. This book has been constructed as a link between the books devoted to commercial applications of membrane processes and the more specific literature on materials characterization. Despite the availability of a vast literature on membrane processes, we feel this book fills an important gap, since it offers a broad overview of the different characterization methodologies currently available or under development and it also gives a thorough state of the art for each of them. Going through the different chapters of the book, any scientist, whether already in the membrane field or a beginner, will find helpful information to select the appropriate methodology for off- and/or on-line monitoring of the process.

Tarragona (Spain), December 2008

*Carme Güell
Montserrat Ferrando
Francisco López*

List of Contributors

Gabriela G. Badolato

Universität Karlsruhe
Institut für Bio- und Lebensmittel-
technik
Lebensmittelverfahrenstechnik
Kaiserstrasse 12
76128 Karlsruhe
Germany

Juana Benavente

Universidad de Málaga
Facultad de Ciencias
Departamento de Física Aplicada I
Grupo de Caracterización
Electrocinética y Electroquímica de
Membranas e Interfases
Avda Cervantes 2
29071 Malaga
Spain

W. Richard Bowen

i-Newton Wales
54 Llwyn y mor, Caswell
Swansea SA3 4RD
United Kingdom

C. Cabassud

Université de Toulouse
Laboratoire d'Ingénierie des Systèmes
Biologiques et Procédés
INSA/CNRS/INRA
135 Avenue de Rangueil
31077 Toulouse Cedex
France

Vicki Chen

University of New South Wales
School of Chemical Sciences and
Engineering
UNESCO Centre for Membrane
Science and Technology
High Street, Kensington
2052 Sydney
Australia

João G. Crespo

Universidade Nova de Lisboa
Faculdade de Ciências e Tecnologia
Departamento de Química
Requimte-CQFB
Campus da Caparica
2829-516 Caparica
Portugal

Zhanfeng Cui

University of Oxford
Department of Engineering Science
Parks Road
Oxford OX1 3PJ
United Kingdom

Robert H. Davis

University of Colorado
Department of Chemical and
Biological Engineering
424 UCB
Boulder, CO 80309-0424
USA

Stefano Deabate

Université Montpellier II
Institut Européen des Membranes
CC 047, Place Eugène Bataillon
34095 Montpellier Cedex 5
France

Montserrat Ferrando

University Rovira i Virgili
Department d'Enginyeria Química
Campus Sescelades
Avda Països Catalans 26
45007 Tarragona
Spain

Robert Field

University of Oxford
Department of Engineering Science
Parks Road
Oxford OX1 3PJ
United Kingdom

Barbara Freudig

Universität Karlsruhe
Institut für Bio- und Lebensmittel-
technik
Lebensmittelverfahrenstechnik
Kaiserstrasse 12
76128 Karlsruhe
Germany

Ricard Garcia-Valls

University Rovira i Virgili
Department d'Enginyeria Química
Avda Països Catalans 26
43983 Tarragona
Spain

Carme Güell

University Rovira i Virgili
Department d'Enginyeria Química
Campus Sescelades
Avda Països Catalans 26
45007 Tarragona
Spain

C. Guigui

Université de Toulouse
Laboratoire d'Ingénierie des Systèmes
Biologiques et Procédés
INSA/CNRS/INRA
135 Avenue de Rangueil
31077 Toulouse Cedex
France

Tània Gumí

University Rovira i Virgili
Department d'Enginyeria Química
Avda Països Catalans 26
43983 Tarragona
Spain

Antonio Hernández

Universidad de Valladolid
Facultad de Ciencias
Departamento Física Aplicada
Real de Burgos s/n
47071 Valladolid
Spain
and
Surface and Porous Materials (SMAP)
UA-CSIC-UVA
Edificio de I+D
Belen s/n
Campus Miguel Delibes
47071 Valladolid
Spain

Nidal Hilal

University of Nottingham
School of Chemical and
Environmental Engineering
Nottingham, NG7 2RD
United Kingdom

David Hughes

University of Oxford
Department of Engineering Science
Parks Road
Oxford OX1 3PJ
United Kingdom

Patrice Huguet

Université Montpellier II
 Institut Européen des Membranes
 CC 047, Place Eugène Bataillon
 34095 Montpellier Cedex 5
 France

Ping Idda

Universität Karlsruhe
 Institut für Bio- und Lebensmittel-
 technik
 Lebensmittelverfahrenstechnik
 Kaiserstrasse 12
 76128 Karlsruhe
 Germany

Jeffrey S. Knutsen

University of Colorado
 Department of Chemical and
 Biological Engineering
 424 UCB
 Boulder, CO 80309-0424
 USA

Uwe Lambrich

Universität Karlsruhe
 Institut für Bio- und Lebensmittel-
 technik
 Lebensmittelverfahrenstechnik
 Kaiserstrasse 12
 76128 Karlsruhe
 Germany

Pierre Le-Clech

University of New South Wales
 School of Chemical Sciences and
 Engineering
 UNESCO Centre for Membrane
 Science and Technology
 High Street, Kensington
 2052 Sydney
 Australia

Francisco López

University Rovira i Virgili
 Department d'Enginyeria Química
 Campus Sescelades
 Avda Països Catalans 26
 45007 Tarragona
 Spain

Ángel Emilio Lozano

CSIC
 Instituto de Ciencia y Tecnología
 de Polímeros
 Juan de la Cierva 3
 28006 Madrid
 Spain
 and
 Surface and Porous Materials (SMAP)
 UA-CSIC-UVA
 Edificio de I+D
 Belen s/n
 Campus Miguel Delibes
 47071 Valladolid
 Spain

Mika Mänttari

Lappeenranta University of
 Technology
 Department of Chemical Technology
 Laboratory of Membrane Technology
 and Technical Polymer Chemistry
 Skinnarilankatu 34
 53851 Lappeenranta
 Finland

Ángel Marcos-Fernández

CSIC
Instituto de Ciencia y Tecnología
de Polímeros
Juan de la Cierva 3
28006 Madrid
Spain
and
Surface and Porous Materials (SMAP)
UA-CSIC-UVA
Edificio de I+D
Belen s/n
Campus Miguel Delibes
47071 Valladolid
Spain

Yulita Marselina

University of New South Wales
School of Chemical Sciences and
Engineering
UNESCO Centre for Membrane
Science and Technology
High Street, Kensington
2052 Sydney
Australia

J. Mendret

Université de Toulouse
Laboratoire d'Ingénierie des Systèmes
Biologiques et Procédés
INSA/CNRS/INRA
135 Avenue de Rangueil
31077 Toulouse Cedex
France

Marianne Nyström

Lappeenranta University of
Technology
Department of Chemical Technology
Laboratory of Membrane Technology
and Technical Polymer Chemistry
Skinnarilankatu 34
53851 Lappeenranta
Finland

Laura Palacio

Universidad de Valladolid
Facultad de Ciencias
Departamento Física Aplicada
Real de Burgos s/n
47071 Valladolid
Spain
and
Surface and Porous Materials (SMAP)
UA-CSIC-UVA
Edificio de I+D
Belen s/n
Campus Miguel Delibes
47071 Valladolid
Spain

Carla A. M. Portugal

Universidade Nova de Lisboa
Faculdade de Ciências e Tecnologia
Departamento de Química
Requimte-CQFB
Campus da Caparica
2829-516 Caparica
Portugal

Pedro Prádanos

Universidad de Valladolid
Facultad de Ciencias
Departamento Física Aplicada
Real de Burgos s/n
47071 Valladolid
Spain
and
Surface and Porous Materials (SMAP)
UA-CSIC-UVA
Edificio de I+D
Belen s/n
Campus Miguel Delibes
47071 Valladolid
Spain

Roberto Recio

Universidad de Valladolid
 Facultad de Ciencias
 Departamento Física Aplicada
 Real de Burgos s/n
 47071 Valladolid
 Spain
 and
 Surface and Porous Materials (SMAP)
 UA-CSIC-UVA
 Edificio de I+D
 Belen s/n
 Campus Miguel Delibes
 47071 Valladolid
 Spain

Jean-Christophe Remigy

Université Paul Sabatier
 Laboratoire de Génie Chimique
 CNRS UMR 5503
 118 Route de Narbonne
 31062 Toulouse Cedex 9
 France

P. Schmitz

Université de Toulouse
 Laboratoire d'Ingénierie des Systèmes
 Biologiques et Procédés
 INSA/CNRS/INRA
 135 Avenue de Rangueil
 31077 Toulouse Cedex
 France

Helmar Schubert

Universität Karlsruhe
 Institut für Bio- und Lebensmittel-
 technik
 Lebensmittelverfahrenstechnik
 Kaiserstrasse 12
 76128 Karlsruhe
 Germany

Heike P. Schuchmann

Universität Karlsruhe
 Institut für Bio- und Lebensmittel-
 technik
 Lebensmittelverfahrenstechnik
 Kaiserstrasse 12
 76128 Karlsruhe
 Germany

Philippe Sizat

Université Montpellier II
 Institut Européen des Membranes
 CC 047, Place Eugène Bataillon
 34095 Montpellier Cedex 5
 France

Richard M. Stuetz

University of New South Wales
 School of Civil and Environmental
 Engineering
 UNSW Water Research Centre
 High Street, Kensington
 2052 Sydney
 Australia

Uday Tirlapur

Department of Engineering Science
 University of Oxford
 Parks Road
 Oxford OX1 3PJ
 United Kingdom

Carles Torras

University Rovira i Virgili
 Department d'Enginyeria Química
 Campus Sescelades
 Avda Països Catalans 26
 43983 Tarragona
 Spain

Kuo-Lun Tung

Chung Yuan Christian University
R&D Center for Membrane
Technology
Department of Chemical Engineering
200 Chung-Pei Road, Chungli
320 Taoyuan
Taiwan

Maria Zator

University Rovira i Virgili
Department d'Enginyeria Química
Campus Sescelades
Avda Països Catalans 26
45007 Tarragona
Spain

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