Edited by Carme Güell,
Montserrat Ferrando, Francisco López

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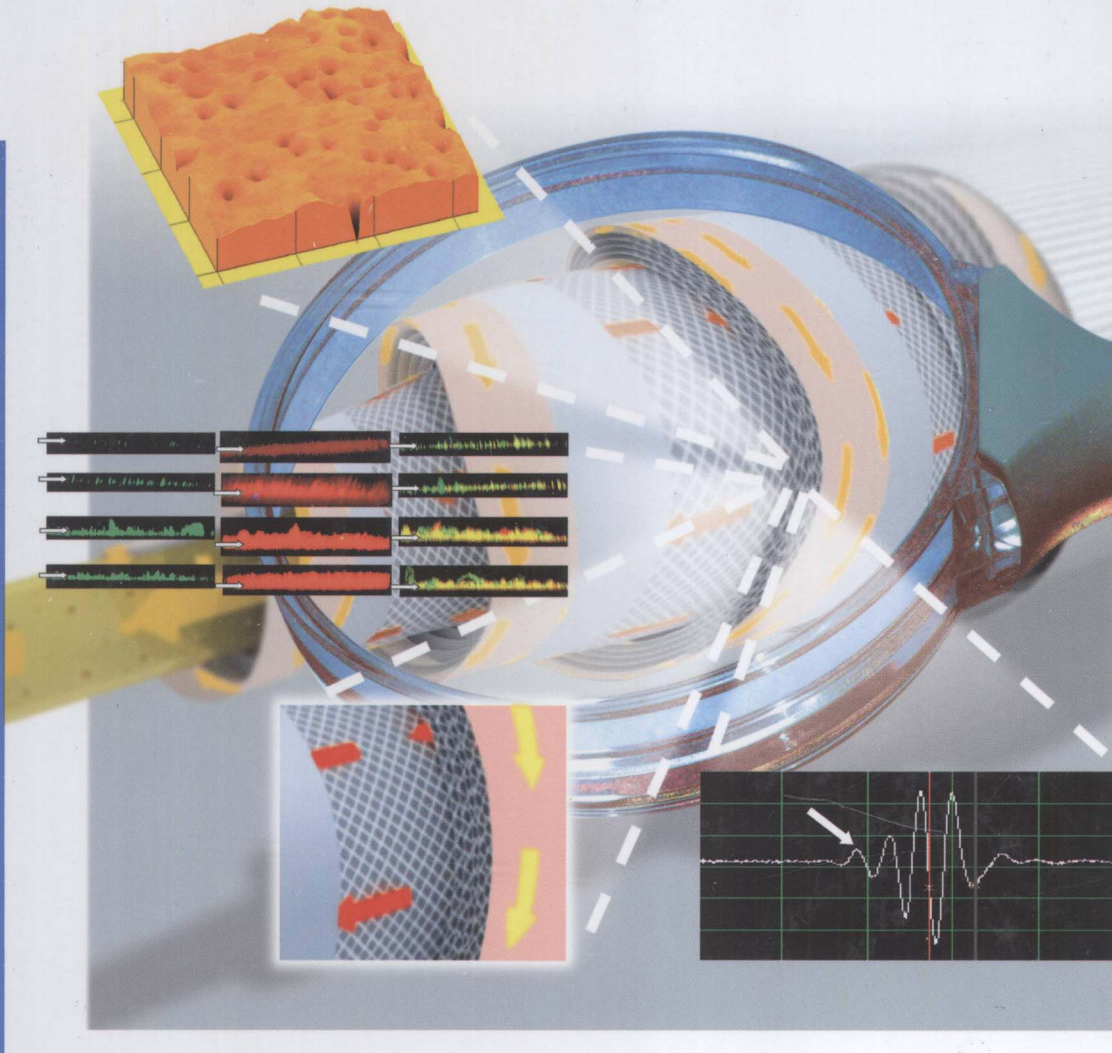

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Carme Güell, Montserrat Ferrando,
and Francisco López

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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

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