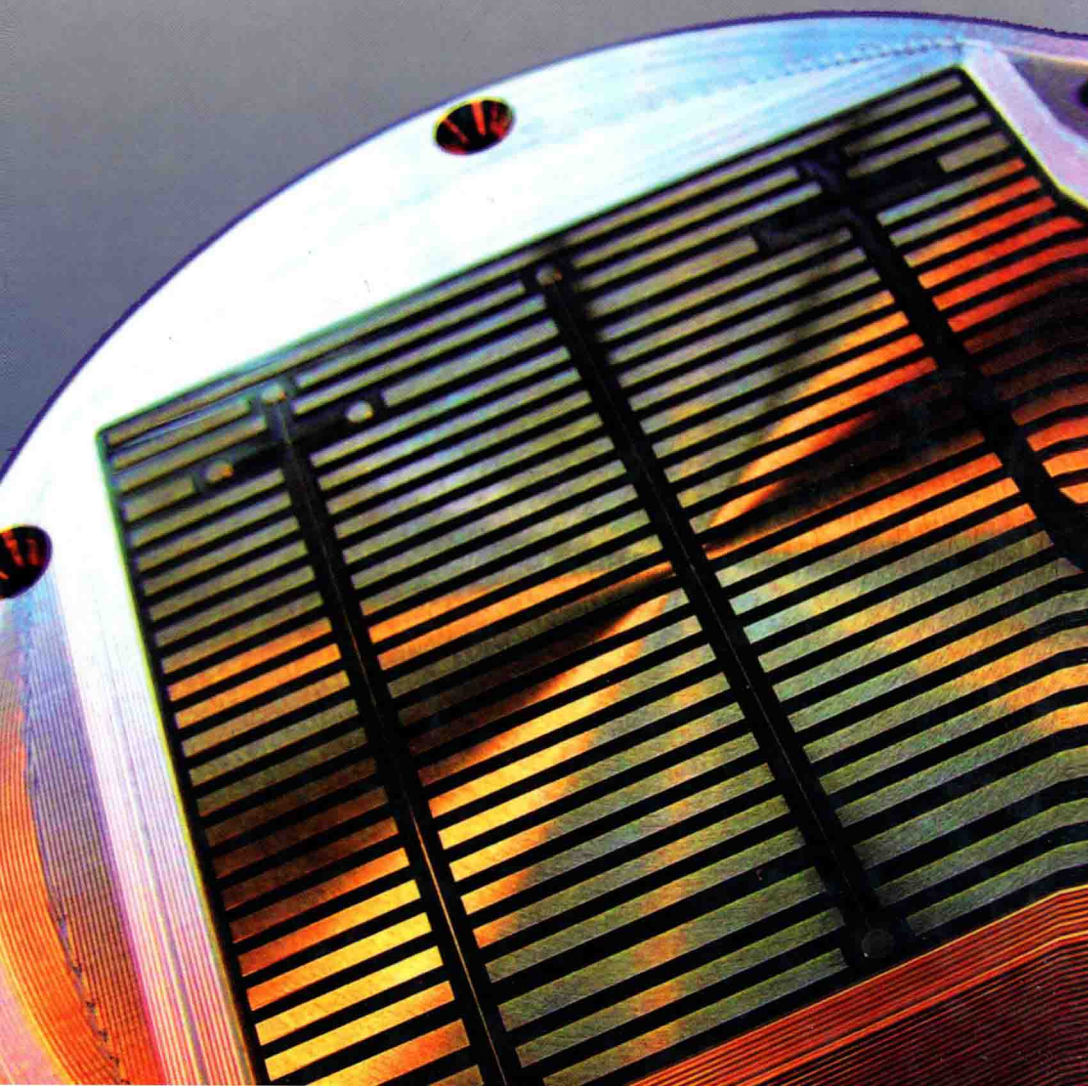


 WILEY

BIOLOGICAL APPLICATIONS OF MICROFLUIDICS

Edited by Frank A. Gomez



BIOLOGICAL APPLICATIONS OF MICROFLUIDICS

EDITED BY

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**BIOLOGICAL
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OF MICROFLUIDICS**

*Dedicated to my wife Olivia,
sons Frank and Nicholas and my dog Mimis
and for all of their hours of devotion
and unconditional love.*

PREFACE

Microfluidics is still a field in its infancy and, like a baby, it is growing with its future ahead of it. The focus of this book is to highlight some of the more recent works in microfluidics and to demonstrate its potential in solving societal problems.

In Chapter 1, a basic overview of microfluidics is described highlighting some of the more recent seminal works in the area. Chapters 2–6 deal with the use of microfluidics in cells including cells sorting, manipulation, and analysis. Chapters 7–10 detail work on chemical (enzymatic and nonenzymatic) synthesis on a microfluidic format. Chapters 11–14 present work focusing on the use of microfluidics in chemical separations. Chapters 15–17 focus on biomedical applications of microfluidics including microengineering and point-of-care diagnostics. Chapters 18–21 deal with fabrication of microfluidics chips. Chapters 22–25 focus on hybrid microfluidic applications.

I thank the contributors for useful and interesting discussions of their works and the stimulation it has provided for my research groups own studies. I also thank my research students at California State University, Los Angeles, who have contributed to our own studies in microfluidics. I thank Maggie Pereira for her many hours of reformatting the references. I hope that this book will help readers to arrive at a better understanding of the great potential of microfluidics and the wonderful things to come.

Frank A. Gomez, Ph.D.

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