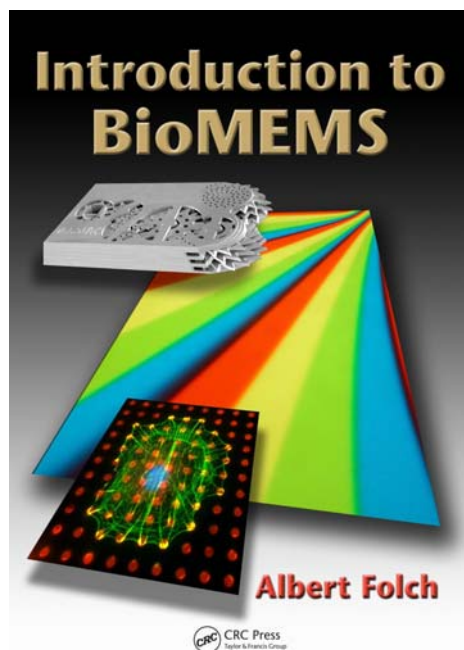


ALBERT FOLCH INTRODUCTION TO BIOMEMS



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The entire scope of the BioMEMS field – at your fingertips

Helping to educate the new generation of engineers and biologists, *Introduction to BioMEMS* explains how certain problems in biology and medicine benefit from and often require the miniaturization of devices. The book covers the whole breadth of this dynamic field, including classical microfabrication, microfluidics, tissue engineering, cell-based and noncell-based devices, and implantable systems. It focuses on high-impact, creative work encompassing all the scales of life – from biomolecules to cells, tissues, and organisms.

Brilliant color presentation

Avoiding the overwhelming details found in many engineering and physics texts, this groundbreaking book – in color throughout – includes only the most essential formulas as well as many noncalculation-based exercises. Important terms are highlighted in bold and defined in a glossary. The book contains more than 400 color figures, most of which are from the original researchers.

Coverage of both historical perspectives and the latest developments

Developed from the author's long-running course, this classroom-tested text gives readers a vivid picture of how the field has grown by presenting historical perspectives and a timeline of seminal discoveries. It also describes numerous state-of-the-art biomedical applications that benefit from "going small", including devices that record the electrical activity of brain cells, measure the diffusion of molecules in microfluidic channels, and allow for high-throughput studies of gene expression.

Book Features

- Focuses on the essentials of microfabrication;
- Presents in-depth coverage of the techniques of cell/protein micropatterning;
- Gives a thorough presentation of microfluidics, including theory, designs, and historical perspective;
- Explains how BioMEMS technology can increase the biochemical and biophysical complexity of cell culture microenvironments;
- Discusses how BioMEMS devices can improve fluid handling and increase experimentation throughput;
- Provides a good overall vision of how implantable microdevices have evolved, covering the origin of the field and the newest devices;
- Highlights fundamental concepts and defines them in an extensive glossary;
- Offers downloadable PowerPoint slides for instructors.

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