Microfluidics has facilitated major biochemical application advancements in point-of-care diagnostics, bioterrorism detection, and drug discovery. There are numerous potential applications in biotechnology, pharmaceuticals, the life sciences, defense, public health, and agriculture. Microfluidic lab-on-a-chip (LOC) technologies represent a revolution in laboratory experimentation, bringing the benefits of miniaturization, integration, and automation to many research-based industries.

Biological Applications of Microfluidics details recent advances in the biological applications of microfluidics, including cell sorting, DNA sequencing on a chip, microchip capillary electrophoresis, and synthesis on a microfluidic format. After an overview of microfluidics highlighting recent seminal works, it includes multiple chapters on:

- Cell analysis on microfluidic devices
- Chemical (enzymatic and non-enzymatic) reactions on microchips
Separations on microchips

- Biomedical applications of microfluidics

- Microfluidic fabrication

- Hybrid microfluidic applications

Microfluidics has incredible potential in a variety of areas. This book covers many recent advances, including microfabricated LOC technologies, advanced microfluidic tools, microfluidic culture platforms for stem cell and neuroscience research, a novel application of microfluidic LOC devices that facilitates fundamental research in proteomics that cannot be performed without miniaturization, the nano fountain pen, and more.

With contributions from leading experts in chemistry, physics, bioengineering, material science, biomedicine, and other fields plus references at the end of each chapter to facilitate further study, this is an all-in-one, hands-on resource for analytical chemists and researchers. It is also an excellent resource for students studying analytical chemistry or biotechnology.

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**ABOUT THE AUTHOR**

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