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# Lab-on-a-Chip Technology (Vol. 2)

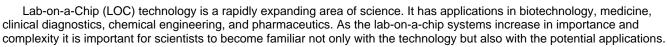
# **Biomolecular Separation and Analysis**

Edited by: Keith E. Herold and Avraham Rasooly

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The editors of this book have brought together expert authors from many countries to produce a comprehensive volume focusing on the applications of LOC technology in the biomedical and life sciences. The first section includes chapters on LOC biomolecule separation. Separation of biomolecules is an important element of various clinical laboratories and is required for many down stream analytical applications. Various electrophoresis and liquid chromatography applications for proteins and DNA are described as well as methods for cell separation, with an emphasis on blood cell separation, which have many important clinical applications. The second part includes chapters on analysis and manipulation technologies. Authors describe protein, genetic (mainly PCR) and transcriptome analysis with examples from research and clinical applications, as well as cell manipulation and analysis including cell viability analysis and microorganism capturing.

A skillful selection of topics of exceptional importance to current science ensures that this book will be of major value to a wide range of molecular biologists, clinical scientists, microbiologists, biochemists and anyone interested in LOC technology or developing applications for LOC devices.

Chapter 1. Two-Dimensional Electrophoresis in a Chip. Z. Hugh Fan, Champak Das and Hong Chen

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Chapter 4. Hydrophoretic Method for Continuous Blood Cell Separation. Sungyoung Choi and Je-Kyun Park

Chapter 5. Microchip Gel Electrophoresis of DNA with Integrated Whole-column Detection. Roger C. Lo and Victor M. Ugaz

Chapter 6. Microscale Blood Separation Technology. Jeffrey D. Zahn, Sung Yang, Akif Undar and Pantelis Athanasiou

Chapter 7. Microfluidic Drops as Microreactors. Charles N. Baroud

Chapter 8. Optical Sectioni. ng for Microfluidics. Yeh-Chan Ahn and Zhongping Chen

Chapter 9. Acquisition of Single Cell Data in an Optical Microscope. Kristin Sott, Emma Eriksson and Mattias Goksör

Chapter 10. Elaborating Lab-on-a-Chips for Single-cell Transcriptome Analysis. Nathalie Bontoux, Luce Dauphinot and Marie-Claude Potier

Chapter 11. Integrated Circuit/Microfluidic Chips for Dielectric Manipulation. Thomas P. Hunt, D. Issadore, K.A. Brown, Hakho Lee and R.M. Westervelt

Chapter 12. Microchip-based PCR Amplification Systems. Nathaniel C. Cady

Chapter 13. Cell Viability Measurement Using a Portable Photodiode Array Chip. Joon Myong Song and Ho Taik Kwo

Chapter 14. A Charge-coupled Device (CCD) Based Optical Detector for Lab-on-a-Chip. Keith Herold and Avraham Rasooly

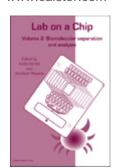
Chapter 15. PCR Devices Using Glass Substrate. Hao Yu, Jianhua Qin and Bingcheng Lin

Chapter 16. Braille Microfluidics. Tommaso F. Bersano-Begey, Yoko Kamotani and Shuichi Takayama

Chapter 17. Microfluidic Devices for Single-cell Analysis. Yan Chen and Jiang F. Zhong

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