

Contents

Part I Photometry, Color Sensors and Fluorescence Labels

Color Sensors and Their Applications	3
Poenar Daniel Puiu	

Addressing of Concentration Spaces for Bioscreenings by Micro Segmented Flow with Microphotometric and Microfluorimetric Detection	47
J. Michael Köhler, Anette Funfak, Jialan Cao, Dana Kürsten, Steffen Schneider, and P. Mike Günther	

Nanotechnology for Diagnostic and Sensing: Soft and Advanced Imaging/Sensing Approaches to Analyze Biomolecules	83
Alessandra Aloisi and Ross Rinaldi	

Part II Optical Waveguides

Integrated Optical Microsystems for Interferometric Analytics	103
Gian Giuseppe Bentini and Marco Chiarini	

Refractometric Photonic Chips for Biosensing	155
Raphael K. Kribich	

Part III Surface Plasmon Resonance

Surface Plasmon Resonance Bioanalytical Platform to Appraise the Interaction Between Antimicrobial Peptides and Lipid Membranes	183
Mihaela Gheorghiu, Sorin David, Andreea Olaru, Cristina Polonschii, and Eugen Gheorghiu	

Biological Applications of Surface Plasmon Resonance Imaging	211
L. Leroy, E. Maillart, and T. Livache	

Part IV Raman Spectroscopy

Lab-on-a-Chip Surface-Enhanced Raman Spectroscopy	229
A. März, P. Rösch, T. Henkel, D. Malsch, and J. Popp	

Microfluidic Raman Spectroscopy for Bio-chemical Sensing and Analysis	247
Praveen C. Ashok and Kishan Dholakia	

Part V Optical Characterization and Manipulation in Bioreactors

Polymeric Microfluidic Devices for High Performance Optical Imaging and Detection Methods in Bioanalytics	271
Holger Becker and Claudia Gärtner	

Chip Systems for Analysis of Nucleic Acids with Integrated Amplification and Detection	289
Wolfgang Fritzsche, Mark Kielpinski, Matthias Urban, Thomas Henkel, Sabine Werres, Robert Möller, Stefan Wagner, Marko Riedel, and Sandra Julich	

Optofluidic Microsystems for Application in Biotechnology and Life Sciences	305
S. Sinzinger, B.P. Cahill, J. Metze, and M. Hoffmann	

Index	325
--------------------	-----

Optical Nano- and Microsystems for Bioanalytics

Fritzsche, W.; Popp, J. (Eds.)

2012, XII, 332 p., Hardcover

ISBN: 978-3-642-25497-0