

Contents

Modern TCSPC Electronics: Principles and Acquisition Modes	1
Michael Wahl	
Single-Photon Counting Detectors for the Visible Range Between 300 and 1,000 nm	23
Andreas Bültner	
Single-Photon Detectors for Infrared Wavelengths in the Range 1–1.7 μm	43
Gerald S. Buller and Robert J. Collins	
Modern Pulsed Diode Laser Sources for Time-Correlated Photon Counting	71
Thomas Schönauf, Sina Riecke, Andreas Bültner, and Kristian Lauritsen	
Advanced FCS: An Introduction to Fluorescence Lifetime Correlation Spectroscopy and Dual-Focus FCS	89
Thomas Dertinger and Steffen Rüttinger	
Lifetime-Weighted FCS and 2D FLCS: Advanced Application of Time-Tagged TCSPC	111
Kunihiko Ishii, Takuhiro Otsu, and Tahei Tahara	
MFD-PIE and PIE-FI: Ways to Extract More Information with TCSPC	129
Anders Barth, Lena Voith von Voithenberg, and Don C. Lamb	
Photon Antibunching in Single Molecule Fluorescence Spectroscopy ...	159
Kristin S. Grubmayer and Dirk-Peter Herten	
FLIM Strategies for Intracellular Sensing	191
Maria J. Ruedas-Rama, Jose M. Alvarez-Pez, Luis Crovetto, Jose M. Paredes, and Angel Orte	

Multiple-Pulse Pumping with Time-Gated Detection for Enhanced Fluorescence Imaging in Cells and Tissue	225
Rafal Fudala, Ryan M. Rich, Joe Kimball, Ignacy Gryczynski, Sangram Raut, Julian Borejdo, Dorota L. Stankowska, Raghu R. Krishnamoorthy, Karol Gryczynski, Badri P. Maliwal, and Zygmunt Gryczynski	
Pattern-Based Linear Unmixing for Efficient and Reliable Analysis of Multicomponent TCSPC Data	241
Ingo Gregor and Matthias Patting	
Metal-Induced Energy Transfer	265
Narain Karedla, Daja Ruhlandt, Anna M. Chizhik, Jörg Enderlein, and Alexey I. Chizhik	
The Importance of Photon Arrival Times in STED Microscopy	283
Giuseppe Vicidomini, Ivàn Coto Hernández, Alberto Diaspro, Silvia Galiani, and Christian Eggeling	
Single-Color Centers in Diamond as Single-Photon Sources and Quantum Sensors	303
Boris Naydenov and Fedor Jelezko	
Photon Counting and Timing in Quantum Optics Experiments	319
Andreas Ahlrichs, Benjamin Sprenger, and Oliver Benson	
Photon Counting in Diffuse Optical Imaging	343
Dirk Grosenick	
Index	367

<http://www.springer.com/978-3-319-15635-4>

Advanced Photon Counting

Applications, Methods, Instrumentation

Kapusta, P.; Wahl, M.; Erdmann, R. (Eds.)

2015, XII, 370 p. 159 illus., 103 illus. in color.,

Hardcover

ISBN: 978-3-319-15635-4