

Advanced Fluorescence Reporters In Chemistry And Biology Ii

[DOWNLOAD HERE](#)

1;Advanced Fluorescence Reporters in Chemistry and Biology II;3 1.1;Molecular Constructions, Polymers and Nanoparticles;3 1.2;Series Editor;5 1.3;Aims and Scope;5 1.4;Preface;7 1.5;Contents;9 1.6;Part I: General Aspects ;11 1.6.1;Nanocrystals and Nanoparticles Versus Molecular Fluorescent Labels as Reporters for Bioanalysis and the Life Sciences: A Critical Comparison;12 1.6.1.1;1 Introduction;13 1.6.1.2;2 Properties of Molecular and Nanoparticulate Labels and Reporters;15 1.6.1.2.1;2.1 Spectroscopic Properties;15 1.6.1.2.1.1;2.1.1 Luminescent Nanocrystals and Nanoparticles;16 1.6.1.2.1.2;2.1.2 Organic Dyes;21 1.6.1.2.1.3;2.1.3 Metal Ligand Complexes;22 1.6.1.2.1.4;2.1.4 Comparison of Chromophores;23 1.6.1.2.2;2.2 Solubility and Aggregation;26 1.6.1.2.3;2.3 Thermal and Photochemical Stability;27 1.6.1.2.4;2.4 Cyto- and Nanotoxicity;28 1.6.1.3;3 Application of Molecular and Nanoparticulate Fluorophores;30 1.6.1.3.1;3.1 Coupling Chromophores to Biomolecules;30 1.6.1.3.2;3.2 Extra- and Intracellular Targeting of Biomolecules;32 1.6.1.3.3;3.3 Interactions Between Chromophores and their Microenvironment;33 1.6.1.3.4;3.4 Exploitation of Frster Resonance Energy Transfer;35 1.6.1.3.5;3.5 Multiplexing Detection Schemes;36 1.6.1.3.5.1;3.5.1 Spectral Multiplexing;36 1.6.1.3.5.2;3.5.2 Lifetime Multiplexing;37 1.6.1.3.6;3.6 Strategies for Signal Amplification;38 1.6.1.3.7;3.7 Reproducibility, Quality Assurance and Limitations;38 1.6.1.4;4 Applications of Nanoparticles: State-of-the-Art and Future Trends;40 1.6.1.5;5 Conclusions;42 1.6.1.6;References;42 1.6.2;Optimization of the Coupling of Target Recognition and Signal Generation;50 1.6.2.1;1 Introduction;51 1.6.2.2;2 Channels of Communication between Binding Site and Fluorophore;53 1.6.2.2.1;2.1 pi-Conjugated Binding Site and Fluorophore;55 1.6.2.2.2;2.2 Spacer-Separated Binding Site and Fluorophore;59 1.6.2.2.2.1;2.2.1 Single Binding Site-Single Fluorophore Architectures;59 1.6.2.2.2.2;2.2.2 Single Binding Site-Double or Multi Fluorophore Architectures;63 1.6.2.3;3 Strategies of Signal Optimization in Fluorescent Probes;65 1.6.2.3.1;3.1 Combinatorial Synthesis of Functional Fluorophores;66 1.6.2.3.2;3.2 Design of Communication Channels for Light-Up Probes;66 1.6.2.3.2.1;3.2.1 For Metal Cations;67 1.6.2.3.2.2;3.2.2 For Anions;70 1.6.2.4;4 Strategies of Signal Amplification;74 1.6.2.4.1;4.1 Chemical

Reactions;74 1.6.2.4.1.1;4.1.1 Transformation of a Leuko Dye into a Fluorophore (Chemodosimeter);75
1.6.2.4.1.2;4.1.2 Catalytic Production of Fluorophores;78 1.6.2.4.1.3;4.1.3 Systems Based on Chemi- and
Bioluminescence;80 1.6.2.4.2;4.2 Displacement of Fluorophores from Binding Sites;83 1.6.2.4.3;4.3
Increasing the Number of Fluorophores per Binding Site;86 1.6.2.4.4;4.4 Involving Fluorophore
Communication;90 1.6.2.4.4.1;4.4.1 In Conjugated Polymers;91 1.6.2.4.4.2;4.4.2 In Nano- and
Microparticles;92 1.6.2.4.4.3;4.4.3 In Dendrimers;93 1.6.2.4.5;4.5 Resonance Energy Transfer;95
1.6.2.4.5.1;4.5.1 Frster/Fluorescence Resonance Energy Transfer ;97 1.6.2.4.5.2;4.5.2 Bioluminescence
Resonance Energy Transfer ;101 1.6.2.5;5 Conclusion;101 1.6.2.6;6 Further Reading;104
1.6.2.7;References;105 1.6.3;Collective Effects Influencing Fluorescence Emission;116 1.6.3.1;1
Introduction;117 1.6.3.2;2 Spectroscopy of Intermolecular Interactions;118 1.6.3.2.1;2.1 Universal
Intermolecular Interactions;118 1.6.3.2.2;2.2 Hydrogen Bonding in the Ground and Excited States;120
1.6.3.2.3;2.3 Excimers and Exciplexes;121 1.6.3.3;3 Resonance Interactions between Fluorophores;122
1.6.3.3.1;3.1 Electron Exchange Interactions;122 1.6.3.3.2;3.2 Frster Resonance Energy Transfer;122
1.6.3.4;4 Site-Selective Red-Edge Effects;123 1.6.3.5;5 Collective Effects Observed with Organic
Dyes;125 1.6.3.5.1;5.1 Superquenching, Concentrational Quenching, and Directed Homo-FRET;126
1.6.3.5.2;5.2 Wavelength Converting;127 1.6.3.5.3;5.3 Light-Harvesting (Antenna) Ef EAN/ISBN :
9783642047015 Publisher(s): Springer, Berlin Format: ePub/PDF Author(s): Demchenko, Alexander P.

[DOWNLOAD HERE](#)

Similar manuals: