

Index

- ACQ 1, 44, 61, 83, 106, 127, 170, 210, 233, 285, 307, 323, 357, 399
- AEE 254
- AEE-active polyacrylates 254
- Aggregate formation 128
- Aggregate morphologies 62
- Aggregate nanoparticle morphology 50
- Aggregate state 67, 253
- Aggregation-caused quenching 1, 44, 61, 83, 106, 127, 170, 210, 233, 253, 285, 307, 323, 357
- Aggregation-enhanced emission 254
- Aggregation-induced emission 1, 39, 40, 61, 85, 105, 127, 155, 170, 191, 205, 233, 309, 323, 337, 357, 399
- AIE 1, 40, 62, 85, 105, 127, 155, 170, 191, 233, 254, 285, 309, 323, 337, 357, 399
- AIE luminogens 67
- AIE-active hyperbranched polymer 145
- AIE-active ion pair 107
- AIE-active materials 206
- AIE-active polymers 65, 253, 357
- Alkyne polyhydrosilylation 271
- Amorphous 66, 323
- Amplified spontaneous emission 68, 210
- Azobenzene derivatives 185
- Benzene-annulated metallocles 25
- Bioassay 155
- Bioimaging 75, 155
- Central stator 158
- Chemosensors 53, 145
- CH- π interactions 65
- Computational chemistry 357
- Conformational change 61
- Conjugation effect 133
- Crystalline 66, 293, 323
- Crystallization-induced emission enhancement 323
- Curtis method 4
- D-A interaction 164
- Dark state 337
- Density functional theory 5, 87, 405, 409
- Diaminobenzene-cored fluorophores 83
- Diketopyrrolopyrrole 170
- Dioxane-water systems 47
- Diphenylacetylene 4
- Dipole-allowed optical spectra 370
- 9,10-Distyrylanthracene 63
- 9,10-Distyrylanthracene derivatives 61
- DMF-water mixture 345
- Duschinsky rotation effect 360
- Effect of pressure 49
- Effect of temperature 48
- Electroluminescence 100
- Electron-donating groups 195
- Electron-withdrawing groups 89, 195
- Electrooptical devices 53
- Electrostatic forces 107
- Energy gap 156
- Energy transfer 83
- Excimer formation 83
- Excited state 359, 400
- Excited-state decay processes 376, 409
- Excited-state dipole moment 344
- Excited-state intramolecular proton transfer 241
- Excited-state lifetimes 49, 338
- External control 318

- External factors 128
 External quantum efficiency 101
 External stimuli 67
- First-principles calculations 358
 Fluorescence 66, 89, 105, 401
 Fluorescence 'turn-on' chemosensor 181
 Fluorescence decay dynamics 317
 Fluorescence probes 180
 Fluorescence switching 180
 Fluorescent aggregates 106
 Fluorescent liquid crystals 270
 Fluorescent organic nanoparticles 111
 Fluorescent probes 74
 Fluorescent sensors 74
 Franck-Condon principle 401
 Full width at half-maximum 210
- Germaindene 19
 Germoles 1, 39
 Graphene oxide 143
 Grinding-fuming process 327
 Group 14 metalloles 39
- H-aggregation 193
 Hexaphenylsilole 41, 254, 308
 High-density data storage 333
 High-tech applications 254
 HOMO 156
 Host materials 100
 HPS 2, 254, 308
 Huang-Rhys factor 375, 408
 Hydrogen bonding 65, 292
 Hydrophobic interactions 107
 Hyperbranched polymers 27
- Intermolecular interactions 83, 205, 206, 233, 329, 308
 Internal control 318
 Internal conversion 61
 Internal structural control 50
 Intersystem crossing 61
 Intramolecular charge transfer 61, 86, 164
 Intramolecular rotation 50, 65, 172, 192
 Intramolecular torsion 134
 Ion exchange 107
- J-aggregation 193
 Kasha's rule 401
- Ladder polymers 28
 Lippert-Mataga equation 242, 344
 Lowest lying transition 177
 Luminescence 44, 61, 359
 Luminescent organogels 234
 Luminogen aggregation 254
 LUMO 156
- Metal or metal ion chelation 296
 Metal-free click polymerizations 269
 Metallafluorenes 19, 21
 Metallaindenes 19
 Metalloles 40
 Metathesis and exchange reactions 15
 Molecular conformation 65, 137, 329
 Molecular geometries 50, 412
 Molecular optical spectra formalisms 360
 Molecular rotations 286
 Morphology transition 214
 Multicolor fluorescence 198
- Nanoaggregate formation 310
 Nanoaggregates 172, 269
 Nanoparticles 6
 Negative photoresist pattern 260
 Nonadiabatic electronic coupling 384
 Nonemissive state 338
 Nonluminescent species 44
 Nonradiative deactivation 65
 Nonradiative decay 83, 342, 359, 401
 Nonradiative pathway 63
 Nonradiative relaxation process 65
- OLEDs 53, 136, 155
 Oligomers 25
 Optical absorption spectrum 361
 Optical limiting 275
 Optoelectronic devices 83, 205, 254, 357
 Orbital overlap 401
 Organic ion pairs 105
 Organic salts 107
 Organic solid-state lasers 68
 Organometallic complexes 222
 Organometallic molecules 62
- Packing patterns 329
 Parity forbidden 401
 π -conjugated fragments 399
 Perylene 157
 Phosphorescence 293, 401

- Phosphorescence spectrum 364
 Photoisomerization 185
 Photoluminescence 18, 172, 208, 255, 285, 298, 308, 324, 338
 Photophysical properties 98
 Piezochromism 72, 313
 Plumboles 43
 Poly(vinylene sulfide)s 272
 Polyacetylenes 258
 (Poly)arylated benzenes 130
 Polyarylenes 263
 Polybenzosiloles 28
 Polydiynes 259
 Polyelectrolytes 116, 292
 Polyenes 129
 Polymers 25
 Polysiloles 26, 51
 Polysilylenevinylenes 271
 Polytriazoles 269
 Postpolymerization modification 257
 π - π interactions 235
 Propeller-shaped molecules 105, 254, 323
 Propeller-shaped nonplanar structure 192
 QM/MM 368, 409
 Quantitative predictions 358
 Quantum efficiency 359
 Quantum mechanics and molecular mechanics 368, 409
 Quantum yield 5, 40, 41, 61, 84, 109, 208, 310, 324
 Radiative deactivation 66
 Radiative decay 342, 401
 Radiative decay rate 365, 402
 Red and near-infrared emissions 414
 Red fluorophores 89
 Red/NIR-emitting fluorogens 164
 Red-emitting AIE materials 155
 Refractive indices 264
 Reorganization energy 381
 Restriction of intramolecular rotation 4, 48, 63, 105, 128, 155, 172, 205, 233, 254, 285, 307, 310, 337
 RIR 6, 105, 119, 128, 155, 172, 205, 254, 310, 337, 406
 Rotation 65, 128
 Rotational angle 407
 Rotational energy barrier 407
 Self-assembly 68, 195
 Sensors 205
 Silacyclopentadienes 41
 Silafluorenes 3
 Silaindenes 19
 Silole polymers 26
 Siloles 1, 39
 Single crystal 91, 208
 Solid-state emission 205
 Solid-state emitters 67, 96
 Solid-state luminescence 85, 337
 Solvatochromism 344
 Solvent viscosity 48
 Spin selection rule 401
 Spin-orbit coupling 369
 Spin-orbit coupling constant 405
 Spontaneous emission spectra 361
 Stannoles 39
 Steady-state absorption 342
 Stimuli-responsive fluorescence switching 206, 217
 Structure-property relationship 381
 Substituent effects 14, 39, 42
 Superamplified detection of explosives 277
 Supramolecular chemistry 158
 Supramolecular interactions 65
 Supramolecular π -Organogels 233
 Supramolecular structures 205
 Surrounding rotors 158
 Tamao procedure 8
 Tetraphenylcyclopentadiene 129
 Tetraphenylethene 9, 116, 254
 Tetraphenylsilole 308
 Tetraphenylthiophene 288
 Thermochromism 314
 THF-water mixture 70, 162, 172, 277, 288, 327, 345
 THF-water systems 41, 47
 Time-resolved emission 338
 Time-resolved fluorescence spectrum 244
 Time-resolved spectroscopy 338
 TPE 116, 254
 TPE-modified perylene bisimides 160
 Transient absorption 343
 Triarylamine derivatives 170
 Triarylamine end-capped triazines 174
 Triphenylbenzene-cored discotic molecules 234
 Twisted conformation 329, 411
 Twisted intermolecular charge-transfer 65, 338, 413
 Twisted structures 66
 Two-photon absorption 169
 2PA cross-sections 169
 Two-photon excited fluorescence spectrum 71, 269

Index

- Acetonitrile-water mixture 10
- ACQ 1, 44, 62, 102, 131, 165, 239
- AEE 122
- Aggregate formation 44
- Aggregated particles 115
- Aggregated state 88, 108, 132
- Aggregation-caused quenching 1, 44, 62, 102, 131, 239
- Aggregation-enhanced emission 122
- Aggregation-induced circular dichroism 108
- Aggregation-induced circularly polarized luminescence 113
- Aggregation-induced emission 1, 44, 62, 87, 107, 131, 157, 165, 190, 209, 259
- AIE 1, 44, 62, 88, 131, 165, 190, 209, 239, 259
- AIE-active liquid crystalline polymers 54
- AIE-active materials 107
- AIE dye-encapsulated nanomicelles 210, 227
- AIE-nanoparticles 221
- AIE nanoprobes 216
- Aluminum ion 136
- Amphiphilic molecules 176
- Amyloid fibrillation 267
- Aromatic ketone 44
- Aryl-substituted pyrrole 131
- Benzophenone 44
- Biogenic amines 157
- Bioimaging 209
- Biomolecules 259
- Biosensors 185, 190
- Biotechnology 259
- Carbohydrate-mediated biological interactions 189
- Cation and anion sensors 166
- Cell staining 269
- Chemosensors 62, 136, 168, 185
- Chiral acids 91
- Chiral AIE receptors 95
- Chiral amines 88
- Chiral fluorescence receptors 88
- Chiral recognition 87
- Circularly polarized luminescence, 107
- Click synthesis 242
- Concentration-quenching effect 1, 44
- CPL 107
- Crystalline state 44
- Crystallization-induced emission 44
- Crystallization-induced emission enhancements 76
- Crystallization-induced phosphorescence 43
- Current efficiency 5
- Cyano-substituted stilbenoid derivatives 14
- DCM-hexane mixture 110
- Detection of explosives 183
- Dissymmetry factors 107
- Distyrylbenzene derivatives 14
- Duschinsky rotation 113
- Dynamic quenching 125
- EL efficiency 5
- Electroluminescence 1, 64
- Electron mobility 7
- Electron-transporting layer 2
- Emission dynamics 113
- Emissive core-shell silica nanoparticles 178
- Enantiomeric excess determination 87

- Enantioselectivity 96
 Energy/charge-transfer interactions 122
 Förster resonance energy transfer 171
 Fluorescence-based assays 189
 Fluorescence immunoassay 266
 Fluorescence turn-on detection 166
 Fluorescent aggregates 173
 Fluorescent nanoprobe 210
 Fluorimetric assays 173
 Fluorimetric biosensors 169
 Fluorimetric sensing 158
 Fluorimetric titration 261
 G-quadruplex 169, 262
 Helical assembly 108
 Heteroaggregate complexation 202
 Hierarchical helical structures 108
 Hole-transporting layer 2
 Hydrogen bonds 45, 150
 Hydrophobic interactions 171
 In vitro imaging 253
 In vitro sensing 244
 In vivo monitoring 251
 Intermolecular interactions 48, 117
 Intersystem crossing 44
 Intramolecular charge-transfer 136, 165
 Intramolecular rotations 115
 Label-free fluorimetric enzymatic assays 176
 Lifetime 113
 Light-emitting layer 2
 Light-up bioprobes 239
 Linear discriminant analysis 160
 Live cell imaging 269
 Long-term cell tracking 269
 Luminescent liquid crystals 52
 Luminescent materials 131
 Luminescent probes 195
 LUMO 3, 61, 151, 191
 Maleimide fluorophore 10
 Mechanism 101
 Mechanofluorochromic materials 61
 Mesoporous material-based sensor 127
 Miscellaneous sensors 183
 Molecular organogels 98
 Molecular packing 68
 Molecular packing structures 65
 Multiphoton-induced fluorescence 223
 Nanoparticles 216
 Nondopant device 10
 Nonradiative decay 151
 OLEDs 1
 Organic chiral π -conjugated molecules 108
 Organic lasing 107, 118
 Organic light-emitting devices 62
 Organic light-emitting diodes 1
 PAGE analyses 265
 Particle size distribution 138
 Phase transition 65
 Phosphole 192
 Phosphole oxide 190
 Phosphorescence 43
 Photoinduced electron transfer 165
 Photoluminescence 1, 64, 110, 132, 190, 211
 Piezofluorochromic AIE compounds 66
 Polycyclic aromatic hydrocarbons 27
 Polymer nanoaggregates 124
 Power efficiency 5
 Propeller-like molecular structure 13
 Protein amyloid fibrillation 171
 Protein sensing 239
 Pseudo-color fluorescence images 215
 Purely organic phosphors, 44
 Pyrroles 13
 Quantum efficiency 108
 Quantum yield 1, 45, 132, 210
 Ratiometric fluorescence detection 173
 Real-time monitoring 245
 Reorganization energy 113
 Restriction of intramolecular rotation 44, 101, 132, 239, 259
 RIR 44, 101, 132, 239, 259
 Room temperature phosphorescence 44
 Selectivity 243
 Silole derivatives 2, 108, 131, 165, 173, 191
 Single crystals 150
 Singlet excited state 44
 Solid-state fluorescence 7
 Solid-state PL quantum yield 5
 Spin-orbit coupling 47
 Static quenching 125

- Statistical analysis 160
Stimuli-responsive materials 64
Structural modeling 115
Superamplified detection of explosives 107
Supramolecular assembly 115
- Target-specific AIE probes 240
Tetraphenylethene 17, 53, 108, 157, 165, 190
THF-water mixture 122
3D Topological structure 122
Three-photon-induced fluorescence 226
Time-resolved photoluminescence 45
Titration 138
TPE 21, 53
Triarylamine derivatives 17
Triphenylethene derivatives 17
Triphenylpyrrole derivatives 132
- Triplet excited state 44
Tumor targeting 216
Turn on fluorescence 158
Twisted conformation 150
Two-color fluorescence switching behavior 71
Two-photon blood vessel imaging 227
Two-photon brain imaging 230
Two-photon-induced fluorescence spectrum 224
- Unfolding/refolding process 266
- Vapochromic effect 77
- Water fraction 122, 149
Water-soluble AIE luminogens 259
White OLEDs 31