

INDEX

- 1, 8-naphthalimide derivatives 214
 157nm Photolithography 497
 193nm Photolithography 497
 1-anilino-8-naphthalene sulphonate (ANS) 62
 1-dimethylamino-5-naphthyl sulfonate (dansyl) 47
 2-(acrylamido)-2-methylpropane sulfonate (AMPS) 81
 2-(dimethylamino)ethyl methacrylate (DMAEMA) 82
 2, 5-dioctyloxy-p-phenylene vinylene (DOO-PPV) polymer 28
 248nm Photolithography 495
 2-vinyl naphthalene 83
 2-vinylnaphthalene-based methacrylic acid (MAA) copolymers 79
 3-(acrylamido)-3-methylbutanoate (AMBA) 82
 3-hydroxy-2-hydroxymethyl-2-methylpropionic acid 230
 9-Aminoacridinium derivatives 66
- Abiotic Degradation and Fragmentation 605
 ACE-labeledPMAA 62, 64
- Acentric order 175
 Acridine orange-LB films 12, 13
 Acridinium compounds 227, 228
 Amphiphilic systems 80
 Antenna effects 78
 Anthracene photodimerization 227
 Anthracene-endcapped PPE 9
 Aromatic 1, 3, 4-oxadiazoles 256
 Arrhenius 123
 Aryldiazonium Salts 424
 Auramine O (AuO)-fluorescence 46
 Autooxidation mechanism 94
- Benzobisthiazole 256
 Benzodioxinone 446
 Bichromophoric spiropyran 213
 Bilayer Cells 278
 Biodegradation and Mineralization 605
 Biomolecular Quenching Constants 53
 Bipyridine ligands 258
 Birks scheme 71
 bis(cyclopentadienyl) complexes 264, 265
 Bisanthracenes 228
 Bisphenol-A Polycarbonate-direct photochemistry 583

- Bisphenol-A Polycarbonate-long wavelengths 584
Blue-ray recording 231
Bulk Heterojunction Cells 279, 280
- Centrosymmetric arrangements 170
Chain conformations 19
Charge-transfer complexes 449
Charge-transfer complexes 637
Chemically amplified resists 484
Chemiluminescence-Poly(ethylene terephthalate) 121
Chemiluminescence-Poly(ethylene terephthalate)-annealing 125
Chemiluminescence-Poly(ethylene terephthalate)-antioxidant effects 122
Chemiluminescence-Poly(ethylene terephthalate)-coumarin doping 124
Chemiluminescence-acrylic polymers 114
Chemiluminescence-antioxidant efficiency 101-103, 119
Chemiluminescence-cellulose 114
Chemiluminescence-Condensation Polymers 119
Chemiluminescence-fullerenes 104
Chemiluminescence-gelatine 109-111
Chemiluminescence-gelatine-bacteria effects 112, 113
Chemiluminescence-HDPE 97, 98
Chemiluminescence-hindered phenolics 100
Chemiluminescence-kinetics 95
Chemiluminescence-LLDPE 97, 98
Chemiluminescence-Micron and Nanoparticle Titanium Dioxide 105
Chemiluminescence-mPE 97, 98
Chemiluminescence-natural polymers 108
Chemiluminescence-Poly(ϵ -caprolactone) 126, 127, 128, 129
Chemiluminescence-Poly(styrene-*b*-ethylene-co-butylene-*b*-styrene) (SEBS) 116
Chemiluminescence-polymers 93
Chemiluminescence-pristine polyolefins 96
Chemiluminescence-stabilised polymers 99, 100
- Chemiluminescence-UV cured Polyurethane-Acrylate-Based Adhesive 116
Chemiluminescence-UV-degraded PECT 120
chromophoric superlattices 172
cis-trans-photoisomerization 210, 218, 219, 226
CMC-Self assembly 81, 82
Combined Stern-Volmer and Perrin Model 54
Comparison Different UV Stabilizers 658
Complexes polyligands 241
Conventional Solar Cells 276, 277
Coumarin 4-based prefluorescent probes 494
Covalent Layer-by-Layer Assemblies 171
Cross-Linkable NLO Dendrimers 161
Cyclam-Cored Dendrimers 192
Cycloaddition Reactions 226
Cyclophane pendant PPE 11
- Dansyl units 201
Dendrimers 230, 231
Dendritic architecture 187
Dexter energy transfer 3, 11, 33, 35
Diarylethenes 213
Diaryliodonium Salts 424
Diels-Alder cycloaddition reaction 167
Dihydrobenzofuran 217
Diphosphine 263
Disordered Organic Semiconductors 315
Donor-Acceptor energy transfer 4, 33
DUV, VUV, AND EUV
Photolithography 494
Dye-coated TiO₂ 282
Dye-Sensitized Cells 282
Dye-sensitized TiO₂ nanoparticle 236
- Ecolyte polymers 610
Effectiveness of UVAs 632
Eich and Wendorff's polymer 220
Electric field poling 170
Electrochemiluminescence 246
Electroluminescent Homopolymers 322
Electroluminescent homopolymers-poly (phenylene)s 322
Electron abstraction 354
Electron transfer 443
Electronic migration 1, 6, 8, 13, 15, 16, 20

- Electronic Transport 313
Electropolymerized Thin Films 245
Energy transfer 1, 6, 7, 17, 25, 26, 31, 79
Europium complexes 251
Excimer formation-hypercoiling 60, 80
Exciplexes 446
Excited State Lifetime Measurements 47
Excited state processes 4
Exciton hopping 2
Exciton migration 2, 6, 10, 317
Excitons 278
E-Z-photoisomerization 225
- Fermi level 277
Ferrocene doping 257, 265
Fluorescence lifetime measurements 50, 51
Fluorescence polyelectrolytes 43
Fluorescence quenching 53
Fluorescence Quenching Measurements 51
Fluorescent conjugated polymers 5
Fluorescent dendrimers 200
Fluorescent dendrimers-metal sensing 201
Forster energy transfer 2, 10, 15, 20, 32, 34, 35, 56
Fourth-generation dendrimer 186
Fowler-Nordheim mechanism 314
Free radical polymerisation 351
FRET-based sensing 36
Fulgenic acid 217
Fulgides, and Fulgimides 213, 217, 218
- Giant Multiporphyrin Arrays 199
Gilch synthesis 324
- Henderson-Hasselbalch equation 76
hetero-polypyridine complexes 198
Hindered amine stabilisers 637
Holograms 221
HOMO-LUMO gap 274, 396
Homonuclear and Heteronuclear Dendritic Complexes 197
Hydrogen atom abstraction 354
Hydrogen-Bonded and Supramolecular Assemblies 173
Hydroperoxidation 94
Hydroperoxide Decomposition 644
Hydrophobic hypercoil 53, 80
Hydrophobic modification 84
Hydrophobic modifier 77
- Hyperbranching 260
Hyperpolarizability 143
- Imaging and Laser Imaging 405
Incident Photon Conversion Efficiency 301
indenofluorene (PEC-PIFTEH) 32
Indirect Photolysis 442
Injection mechanisms 313
Interaction of HALS and Acids 647
Interaction of HALS and External Chemicals 649
Interaction of HALS and Halogenated Flame-Retardants 647
Interaction of HALS with Sulfur based Stabilizers 646
Interaction of HALS-phenolics 645
Interactions of HALS 645
Intermolecular energy transfer 7, 33
Intramolecular energy transfer 7, 18, 33
Ionic photoacid generators 487
Ionisation polyelectrolytes 43
Iridium complexes 247
Iron Arene Complexes 436
Isotropic LC's 15
ITO-coated glass 295
- Jablonski Diagram 6
- Labelled ACE-AMMA-PMMA 57, 58
Langmuir-Blodgett films 11, 170
Laser Plasma Thrusters 555
LED tuning 36
Light absorption-photoinitiators 355
Light harvesting 6
Luminescent polymers 4
- Mach-Zehnder (MZ) interferometer 140, 141
Marcus theory 315
Meal binding sites 250
Mechanism of Action of HAS 639
MEH-PPV 275, 288, 335
MEH-PPV fluorescence 18, 19, 20
MEH-PPV polarised fluorescence 21
MEH-PPV ultra-fast transients 22
MEHPPV/C60 blend 291
MEH-PPV-absorption spectra 24
MEH-PPV-energy transfer 25, 26
Merocyanine 211

- Mesogenic units 223
Metal complexes-polybenzimidazoles 248
Metal complexes-polymer based 235
Metal complexes-Polyprolines 244
Metal complexes-polystyrene 242
Metal complexes-Polyvinylpyridines 244
Metal dithiocarbamates 616
Metal stearate photoactivators 614–616
Metallic based polymers 261, 262
Metallo dendrimers 185
Metallo dendrimers-chelating sites 187
Metallo dendrimers-Gadolinium at the Periphery 197
Metallo dendrimers-Light-Emitting Diodes 191
Metallo dendrimers-metal centers 194
Metallo dendrimers-Multiporphyrin Systems 196
Metallo dendrimers-Phosphorescent Light-Emitting Diodes 246
Metallo dendrimers-Ru(II)-cored dendrimer 188
Metallo dendrimers-Ruthenium Complexes 194
Metallopolymers 235
Mobility Measurements-Hole-Only Diodes 302
Molecular Semiconductors 273
Molecular wires 10
Monte-Carlo modelling 31
Multilayer Devices 340
- N, N, N'*-trimethylethylenediamino pendant-PPETE 16
Nafion 241
Nafion membrane 529
N-Alkoxy Pyridinium Salts 430
Nanolithography 480
naphthodioxinone 446
Naphthopyrans 211
negative photochromism 210
Nematic LC's 15, 16
Nitroxide regeneration 640
NLO chromophores 139
NLO chromophores-arrangements 139
NLO Polymers-3D-Shaped Dendritic systems 158
NLO Polymers-4-(diarylamino)phenyl donor 147
NLO Polymers-crosslinked polymers 153
NLO Polymers-dendritic systems 157
NLO Polymers-Guest-host systems 146
NLO Polymers-main chain systems 153
NLO Polymers-PFCB polymers 156
NLO Polymers-polycarbonate 147, 150
NLO Polymers-Polyimides 148
NLO Polymers-polyurethanes 156
NLO Polymers-polyvinylphenol (PVP) 147
NLO Polymers-side chain systems 148
N-Methyl-2-Alkylthiobenzothiazolium Salts 434
Non-amplified resists 483
Non-centrosymmetric arrangements 170
Non-ionic photoacid generators 489
Non-Linear Optical Polymers 137
Non-Linear Optical Polymers-chromophore design 142
Nonlinear optics-origins 138
Nonradiative Energy Transfer 55, 57, 69, 70
Nonsalt Photoinitiators 440
NRET and DLS measurements 59
- OLEDs-Exciplex Emission 341
OLEDs-External Quantum Efficiency 319
OLEDs-Microcavity 318
OLEDs-optical properties 317
OLEDs-phosphorescent 320
OLEDs-white light emission 340
Oligoproline donor 243
Onium Salts 423
Optical light emitting diodes 240, 246, 309
Optical light emitting diodes-cations and anions 240
Optical light emitting diodes-physical properties 311
Optical light emitting diodes-principles 312
Optoelectronic Properties of Polymers 286
Optoelectronic properties of polymers-annealing effects 291
Optoelectronic properties of polymers-Polymer Morphology 289
Optoelectronic Properties of Polymers-side groups 286
Optoelectronic properties of polymers-solvent effects 290
OPV technology 283

- Organic Solar Cells 278
Oxidation of double bonds 573
Oxidation of ether functions 572
- Packing of chains 30
Pentacene 274
Pentipitycene-incorporating PPE 13, 14
Perrin Model 55, 62
Phenacyl Sulfonium Salts 430
Phenacylammonium Salts 431
Phenyl substituted
 p-hydroxybenzoates 633
Phenylazomethine Dendrimers 198
PHOLEDs 341
Phosphonium Salts 429
Photoablation-Poly(ethylene terephthalate) 451
Photoablation 441
Photoablation-comparison of polymers 562
Photoablation-doped PMMA 554
Photoablation-doped polymers 553
Photoablation-fluoropolymers 451
Photoablation-fundamentals 542
Photoablation-High Fluence Range 544
Photoablation-Intermediate Fluence Range 544
Photoablation-laser sources 548
Photoablation-Low Fluence Range 544
Photoablation-mechanisms 544
Photoablation-other diazo polymers 561
Photoablation-Photochemical Volume Models 545
Photoablation-PMMA 548
Photoablation-polyimides 550
Photoablation-polymer classification 547
Photoablation-Thermal Volume Models 545
Photoablation-Triazene Polymers 557
Photoablation-Ultrashort Pulses 552
Photoablation-Volume Photothermal Model 545
Photoaddressable Cholesteric Photochromic Polymers 225
Photoaddressable Polymers 219
Photobalation-Thermal Surface Models 545
Photocatalytic degradation 617, 618, 619
Photocationic polymerisation-acceleration 457
Photocationic polymerisation-expandable monomers 454
Photocationic polymerisation-frontal 468
Photocationic polymerisation-high reactivity monomers 459
Photocationic polymerisation-Hybrid Monomers 460
Photocationic polymerisation-living 462
Photocationic polymerisation-monomers 449
Photocationic polymerisation-monomers different functionality 454
Photocationic polymerisation-new monomers 450
Photocationic polymerisation-unusual monomers 451
Photocationic polymerisation-UV curing 464
Photochromic polymers 209
Photochromic polymers-azobenzene 209, 219, 222–224
Photochromic polymers-optical data storage 209, 210
Photochromism 210
Photodegradable polymers 603
Photodegradable Polymers Containing Starch 619
Photodegradable polymers-applications 622
Photodegradable Polymers-In-Chain Ketones 608
Photodegradable polymers-intrinsic 606
Photodegradable polymers-Side-Chain Ketones 609
Photodegradable polymers-types 605
Photodegradation 569
Photodegradation of MDMO-PPV:PCBM Blends 578
Photodegradation-absence of oxygen 574
Photodegradation-Bisphenol-A Polycarbonate 582
Photodegradation-ceramic coated polymers 582
Photodegradation-clay composites 589
Photodegradation-Ethylene-Propylene-Diene Monomer/Montmorillonite 593

- Photodegradation-MEH-PPV 572
Photodegradation-OLEDs 571
Photodegradation-Poly(butylene terephthalate) 579
Photodegradation-Polyethylene/Montmorillonite 593
Photodegradation-Polymer nanocomposites 589
Photodegradation-polymer solar cells 570
Photodegradation-Polymer/Boehmite Nanocomposites 595
Photodegradation-Polymer/LDH Nanocomposites 595
Photodegradation-Polymer/Montmorillonite 594
Photodegradation-Polymer/Nanotube de Carbone (NTC) Nanocomposites 596
Photodegradation-Polypropylene/Montmorillonite 590
Photodegradation-radiation cured coatings 597
Photo-Fries reaction 633
Photogenerated isomers 210
Photografting 509
Photografting-a-Cleavage Initiation 514
Photografting-cationic 517
Photografting-forbidden surfaces 530
Photografting-free radical systems 514
Photografting-homogenous 514
Photografting-Hydrogen Abstraction 515
Photografting-immersion 525
Photografting-Lamination 530
Photografting-Membranes 525
Photografting-Photoiniferter 517
Photografting-photoinitiation 510
Photografting-Preirradiation 524
Photografting-Self-Assembled Monolayers 525
Photografting-surface 512, 519
Photografting-vapour phase 525
Photoimaging 479
Photoinduced Oxo-Degradable Polymers 612
Photoinitiators-Sulfides 362
Photoinitiators-Sulfonyl Ketones 363
Photoinitiators-choice 356
Photoinitiators 351
Photoinitiators-excited states 379, 380
Photoinitiated polymerisation-cationic 421
Photoinitiators-Alkylphenylglyoxylates 364
Photoinitiators-Azides and Aromatic Bis-Azides 364
Photoinitiators-Azo, Disulfide, Disilane, and Diselenide Derivatives 364
Photoinitiators-Barton Ester Derivatives 365
Photoinitiators-benzoin ethers 357
Photoinitiators-Benzoyl Oxime Esters 361
Photoinitiators-Bis-Arylimidazole Derivatives 374
Photoinitiators-bond dissociation 390
Photoinitiators-bulk effects 399
Photoinitiators-cage effects 389
Photoinitiators-cleavage 386, 387
Photoinitiators-Coumarin Derivatives 374
Photoinitiators-Dialkoxycetophenones 357
Photoinitiators-difunctional 387
Photoinitiators-Donor/Acceptor Systems 373
Photoinitiators-Dye-Based Systems 373
Photoinitiators-general mechanisms 377, 378
Photoinitiators-Halogenated Ketones and Trichloromethyl Triazines 363
Photoinitiators-hydroperoxides/peroxides 376
Photoinitiators-Hydroxamic Acids and Esters 365
Photoinitiators-Hydroxy Alkyl Phenyl Ketones 360
Photoinitiators-laser photolysis 382, 383
Photoinitiators-Light Absorbing Amines 367
Photoinitiators-Maleimides 373
Photoinitiators-Metal Salts and Metallic Salt Complexes 367
Photoinitiators-Morpholino- and Amino-Ketones 361
Photoinitiators-Multicomponent 376
Photoinitiators-multifunctional 367
Photoinitiators-Organo Metallic 375
Photoinitiators-Organoborates 366
Photoinitiators-Organometallic Compounds 366
Photoinitiators-organosilanes 440
Photoinitiators-Oxysulfonyl Ketones 363

- Photoinitiators-Peresters 365
Photoinitiators-Peroxides 364
Photoinitiators-Photosensitizer-Linked 375
Photoinitiators-primary processes 381
Photoinitiators-propagation 398
Photoinitiators-Pyrylium and Thiopyrylium Salts 374
Photoinitiators-radical analysis 390
Photoinitiators-radical controlled reactions 401
Photoinitiators-Radical reactivity-oxygen 398
Photoinitiators-reactivity 379
Photoinitiators-Selenides 441
Photoinitiators-S-Thiobenzoate Derivatives 363
Photoinitiators-Sulfonic (-SO₃H) and Sulfonic (-SO₂H) Acids 440
Photoinitiators-Sulfoxides 362
Photoinitiators-two component 369
Photoinitiators-water soluble 368
Photoinitiators-iniferters 368
Photoinitiators-ketone/ketone systems 375
Photolithography 479
Photolithography-next generation 498
Photolithography-photochemistry 500
Photolithography-PMMA 501
Photolithography-polyfluorinated materials 502
Photolithography-polysiloxanes 498, 504
Photon-harvesting polymers 79
Photopolymerisation-applications 402
Photopolymerisation-charge-transfer 404
Photopolymerisation-Free Radical Promoted 444
Photopolymerisation-water borne systems 403
Photopolymerization of Acrylates 402
Photopolymerization-dual cure 404
Photopolymerization-hybrid-sol-gel 405
Photopolymerization-Powder Formulations 404
Photoprotection of polycarbonates 586
Photoresist 481
Photoresists-Acid detection 491
Photoresists-fluorescence imaging 493
Photostability of UVAs 631
Photostabilisation 627
Photovoltaic Device Testing 299
Photovoltaics 271, 272, 279
Photovoltaics-Device Fabrication 294
Photovoltaics-organics 273
Photovoltaics-organics-operation 276
Photovoltaics-polymers 284
Photovoltaics-polymers-cyano side groups 287
Photovoltaics-polymers-side groups 285
Photovoltaics-polymers-stability 285, 286
Piperidinoxyl Radical 640
Piperidinyl to Piperidinoxyl Radical 643
PMAA 75
p-n junctions 277
Polarisation fluorescence 63
Poly(1, 4, 5, 8, 9-pentamethylcarbazole) 329
Poly(2, 7-carbazole)s 330
poly(2-decyloxy-1, 4-phenylene) 324
Poly(2-vinylpyridine) 79
Poly(3, 6-carbazole)s 328
Poly(3-alkylthiophene) 337
poly(3-hexylthiophene) 260
poly(9, 9-dioctyl-2, 7-fluorene) 326
Poly(acrylic acid) 66
Poly(acrylic acid) Excited State Lifetime Measurements 67
Poly(acrylic acid) Fluorescence Quenching Measurements 68
Poly(acrylic acid)-Steady-State Spectroscopy 66
Poly(arylene ethynylene) Systems 8
Poly(aryl-ethynylene) oligomers 253
Poly(buylene terephthalate)-Irradiation in oxygen 580
Poly(buylene terephthalate)-Irradiation in vacuum 579
Poly(carbazoles) 327, 328
poly(flourene thiophene) 257
poly(methyl methacrylate) host 212
Poly(para-phenylene vinylene)s 331
Poly(para-phenylene) 31, 330
Poly(phenylene vinylene) Systems 17

- Poly(phenylene vinylene)-bridged porphyrin 255
- Poly(p-phenylene vinylene) 274, 284
- Poly(propylene imine) dendrimers 197
- Poly(thiophene) 255, 272, 284
- Poly(thiophene)-organomolybdenum complex 258, 259
- Poly[2-(dimethylamino)ethyl methacrylate] 75
- Poly[2-methoxy, 5-(29-ethyl-hexyloxy)-p-phenylene vinylene] (MEH-PPV) 17
- Polyamides-stabilisation 660
- Polycarbonates-Organic-Inorganic Hybrid Coatings 587
- Polycarbonates-stabilisation 662
- polydistyrylbenzene (PDSB) 27
- Polyelectrolyte-copolymers 77
- Polyelectrolytes 41
- Polyelectrolytes- Excimer Formation 59, 70
- Polyelectrolytes homopolymers 44
- Polyelectrolytes-amphiphilic 77
- Polyelectrolytes-Block Copolymers 81
- Polyelectrolytes-hypercoiling 45
- Polyelectrolytes-pH-dependent 59
- Polyelectrolytes-Polymethacrylic Acid 44
- Polyelectrolytes-solubilising 45
- Polyesters-stabilisation 662
- Polyethylene-Influence Aging Criterion 655
- Polyfluorene 248, 249, 325
- Polymer sensory systems 36
- Polymer-Bound Onium Salts 436
- Polymeric electrooptic (EO) materials 138
- Polymers Containing Metal Complexes as Photoactivators 613
- Polyoxometallates 263
- Polyphenylenes 252
- Polyplatinyne 262
- Polypropylene copolymers-Appearance of Degradation 656
- Polystyrene Sulfonic Acid 74
- Polystyrene-stabilisation 663
- Porphyrin and Phthalocyanine-Based Dendrimers 190
- Porphyrin and Phthalocyanine-Based Dendrimers-metal complexation 190
- Porphyrins 36, 37
- positive photochromism 210
- PPVs-colour tuning 324
- Probes polyelectrolytes 43
- Production of radicals 353
- PV Device Efficiency 292
- PV Device Efficiency-absorption 293
- PV Device Efficiency-charge extraction 294
- PV Device Efficiency-charge separation 293
- PV Device Efficiency-exciton diffusion 293
- PV Device-Photoluminescence 296-299
- PV Device-Photophysical Measurements 295
- PV Devices-Current-Voltage Measurements 299
- Pyrene excimer 69
- Pyrene fluorescence-doping 48, 49
- Quenchers 634
- Quenching 644
- Quenching by Amines 635
- Radical scavengers 637
- Random and Alternating Copolymers 78
- Richardson-Schottky mechanism 314
- Ruthenium complexes 246
- Ruthenium complexes 237
- Self-assembled G3 dendrimer 189
- Self-assembled systems 166
- Side-Chain Dendronized NLO Polymers 167
- Single-Layer Polymer Cells 278
- Solar Energy 259
- Spectroscopic Ruler Technique 57
- Spin-orbit coupling 5
- Spiropyrans 211
- Stabilisation-molecular weight 650
- Stabilisation-synergism 651
- Steady-State Anisotropy 61, 73
- Steady-state polarization 62
- Steady-State Spectroscopy 45
- Stern-Volmer 15, 52, 53, 68, 70, 75, 80, 81
- String of Pearls Model 65
- Sulfonium Salts 424
- Superparamagnetic effect, 219
- Superquenching 7

- Synergism-HALS 653
Synergism-UV absorbers 652
- The Hindered Access Model 53
Thienylene-PPV derivatives 286
Thiol-Ene Photopolymerization 403
Thymine dipeptide 229
Time-Resolved Anisotropy
 Measurements 62, 73
Titanium dioxide-activated 618, 619
Transition Metal Complexation 644
Trivial energy transfer 3
- UV Absorbers 629
UV absorption-deactivation
 mechanisms 629, 631
UV absorption-mechanism 629
UV Stabilizers-comparison 656
- Vacuum photolysis of MDMO-PPV
 577
- WPLEDs 342
- Zipper crystallization 211