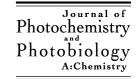


Journal of Photochemistry and Photobiology A: Chemistry 159 (2003) 313-317



www.elsevier.com/locate/jphotochem

# Subject Index of Volume 159

#### Absorption

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

#### Active center lifetime

Kinetic studies of cationic photopolymerizations of phenyl glycidyl ether: termination/trapping rate constants for iodonium photoinitiators, 189

#### Agricultural chemicals

Environmental remediation by an integrated microwave/UV-illumination technique. IV. Non-thermal effects in the microwave-assisted degradation of 2,4-dichlorophenoxyacetic acid in UV-irradiated TiO<sub>2</sub>/H<sub>2</sub>O dispersions, 289

#### Allenyl-naphthol

NMR characterization of allenyl-naphthol in the photochromic process of 3,3-diphenyl-[3*H*]-naphtho[2-1,b]pyran, 227

#### Anthracene

Supramolecular interactions of hexacyanocobaltate(III) with polyamine receptors containing a terminal anthracene sensor, 253

## Anthracene derivatives

Anthracene electron-transfer photosensitizers for onium salt induced cationic photopolymerizations, 173

#### AO7

Visible light and Fe(III)-mediated degradation of Acid Orange 7 in the absence of H<sub>2</sub>O<sub>2</sub>, 241

#### AOF

An innovative coupled solar-biological system at field pilot scale for the treatment of biorecalcitrant pollutants, 89

## Benzene

Photocatalytic degradation of gaseous benzene in air streams by using an optical fiber photoreactor, 47

## 2-Benzoyl-4-benzoyloxyphenol

Facile synthesis and photo-Fries rearrangement of 2-benzoyl-4-benzoyloxyphenol leading to dibenzoyldihydroxybenzene derivatives, 17

#### Bond dissociation energy

Investigation of cleavage processes in photoinitiators: from experiments to molecular modeling, 127

#### Carboxylate ligand

pH-dependent absorption and emission properties of a Re<sup>I</sup> complex working as a carboxylate ligand for Cu<sup>2+</sup>, 249

# Cationic photopolymerization

Kinetic studies of cationic photopolymerizations of phenyl glycidyl ether: termination/trapping rate constants for iodonium photoinitiators, 189

#### Chain scission

Kinetic aspects of chitosan fragmentation by femtosecond laser, 207

#### Chain transfer

Models of multivinyl free radical photopolymerization kinetics, 135 harge transfer

The interactions between tetrapyridyl porphyrin and viologen units covalently linked to polymers, 259

#### Chemical sensors

Supramolecular interactions of hexacyanocobaltate(III) with polyamine receptors containing a terminal anthracene sensor, 253

#### Chemical treatments

Influence of chemical treatments on the photoinduced charge carrier kinetics of nanocrystalline porous  ${\rm TiO_2}$  films, 41

#### Chitosai

Kinetic aspects of chitosan fragmentation by femtosecond laser, 207

#### Chlortoluron

Photodegradation of chlortoluron sensitised by iron(III) aquacomplexes,

#### Chromene

New halogenated diphenyl-2*H*-benzo[*h*]chromene derivatives: synthesis and optical properties, 7

#### Chromophore

Free radical macrophotoinitiators: an overview on recent advances, 103

## CLDT

Models of multivinyl free radical photopolymerization kinetics, 135 Coinitiators

Sulfur-containing initiators and coinitiators of free radical polymerization, 115

#### Coumarin334

Sensitization of photoeffects by hyper-Rayleigh scattering (HRS), 199

#### Coupled oxidation systems

An innovative coupled solar-biological system at field pilot scale for the treatment of biorecalcitrant pollutants, 89

# Cu<sup>2+</sup>

pH-dependent absorption and emission properties of a  ${\rm Re}^{\rm I}$  complex working as a carboxylate ligand for  ${\rm Cu}^{2+}$ , 249

# N-demethylation

Transients in the photoreduction of dinitroarenes by triethylamine and *N*,*N*-dialkylanilines in benzene, 219

#### Dibenzoyldihydroxybenzene

Facile synthesis and photo-Fries rearrangement of 2-benzoyl-4-benzoyloxyphenol leading to dibenzoyldihydroxybenzene derivatives, 17

#### 2,4-Dichlorophenoxyacetic acid

Environmental remediation by an integrated microwave/UV-illumination technique. IV. Non-thermal effects in the microwave-assisted degradation of 2,4-dichlorophenoxyacetic acid in UV-irradiated TiO<sub>2</sub>/H<sub>2</sub>O dispersions, 289

#### Dicyanomethylene

Synthesis and photochromism of *E,E*-3,4-(3,5-dimethoxybenzylidene)succinic anhydride and its infra red active 2-dicyanomethylene derivative. 1

#### Dinitroarenes

Transients in the photoreduction of dinitroarenes by triethylamine and N,N-dialkylanilines in benzene, 219

#### Dve

Visible light and Fe(III)-mediated degradation of Acid Orange 7 in the absence of H<sub>2</sub>O<sub>2</sub>, 241

Elsevier Science B.V. doi:10.1016/S1010-6030(03)00263-6

Electrochemical impedance spectroscopy

Performance and stability of TiO<sub>2</sub>/dye solar cells assembled with flexible electrodes and a polymer electrolyte, 33

Electron beam irradiation

Ionic and excited species in irradiated poly(ethylene terephthalate) doped with pyrene, 23

Electron transfer

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

Excitation electron transfer

The interactions between tetrapyridyl porphyrin and viologen units covalently linked to polymers, 259

19F NMR

New halogenated diphenyl-2*H*-benzo[*h*]chromene derivatives: synthesis and optical properties, 7

Fe(III) aquacomplexes

Photodegradation of chlortoluron sensitised by iron(III) aquacomplexes, 81

Ferric ions

Visible light and Fe(III)-mediated degradation of Acid Orange 7 in the absence of  $H_2O_2$ , 241

Fixed Bed Reactor

An innovative coupled solar-biological system at field pilot scale for the treatment of biorecalcitrant pollutants, 89

Fluorescence

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

The interactions between tetrapyridyl porphyrin and viologen units covalently linked to polymers, 259

Fluorescent

Supramolecular interactions of hexacyanocobaltate(III) with polyamine receptors containing a terminal anthracene sensor, 253

Free radical polymerization

Photoinitiated polymerization of methyl methacrylate by phenacyl type salts, 151

Fulgides

Synthesis and photochromism of *E,E-*3,4-(3,5-dimethoxybenzylidene)succinic anhydride and its infra red active 2-dicyanomethylene derivative. 1

Herbicides

Factors influencing the photocatalytic degradation of sulfonylurea herbicides by TiO<sub>2</sub> aqueous suspension, 71

Homogeneous photocatalysis

Photodegradation of chlortoluron sensitised by iron(III) aquacomplexes, 81

Hyper-Rayleigh scattering

Sensitization of photoeffects by hyper-Rayleigh scattering (HRS), 199

Infrared active

Synthesis and photochromism of *E,E*-3,4-(3,5-dimethoxybenzylidene)succinic anhydride and its infra red active 2-dicyanomethylene derivative, 1

Ion recombination

Ionic and excited species in irradiated poly(ethylene terephthalate) doped with pyrene, 23

Iron complexes

The photoinitiation of MMA polymerization in the presence of iron complexes, 145

Isomerization

Photochromism of nitrospironaphthoxazines and spiroanthroxazine, 233

Kinetic rate constants

Kinetic studies of cationic photopolymerizations of phenyl glycidyl ether: termination/trapping rate constants for iodonium photoinitiators. 189

Kinetic studies

New halogenated diphenyl-2*H*-benzo[*h*]chromene derivatives: synthesis and optical properties, 7

Kinetics

Kinetic aspects of chitosan fragmentation by femtosecond laser, 207

Laser flash

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

Macrophotoinitiators

Free radical macrophotoinitiators: an overview on recent advances, 103 Microwave radiation

Environmental remediation by an integrated microwave/UV-illumination technique. IV. Non-thermal effects in the microwave-assisted degradation of 2,4-dichlorophenoxyacetic acid in UV-irradiated TiO<sub>2</sub>/H<sub>2</sub>O dispersions, 289

Mineralisation

Photodegradation of chlortoluron sensitised by iron(III) aquacomplexes, 81

MMA

The photoinitiation of MMA polymerization in the presence of iron complexes, 145

Multivinyl

Models of multivinyl free radical photopolymerization kinetics, 135

Nanocrystalline porous TiO2 films

Influence of chemical treatments on the photoinduced charge carrier kinetics of nanocrystalline porous TiO<sub>2</sub> films, 41

Naphthopyrans

NMR characterization of allenyl-naphthol in the photochromic process of 3,3-diphenyl-[3*H*]-naphtho[2-1,b]pyran, 227

Nitrofurane derivatives

Primary processes of photodecomposition of 2-(5'-nitro-2'-furanyl)-ethenyl-4-{N-[4'-(N,N-diethylamino)-1'-methylbutyl] carbamoyl} quinoline. Effect of oxygen and compound concentration, 213

NMR spectroscopy

NMR characterization of allenyl-naphthol in the photochromic process of 3,3-diphenyl-[3*H*]-naphtho[2-1,b]pyran, 227

Non-stoichiometry

A relation between the non-stoichiometry and hydroxyl radical generated at photocatalytic TiO<sub>2</sub> on 4CP decomposition, 301

OH radical

A relation between the non-stoichiometry and hydroxyl radical generated at photocatalytic  $TiO_2$  on 4CP decomposition, 301

Optical fiber

Photocatalytic degradation of gaseous benzene in air streams by using an optical fiber photoreactor, 47

Organic hole scavengers

Effects of organic hole scavengers on the photocatalytic reduction of selenium anions, 273

Oxide semiconductors

Phthalocyanine modified TiO<sub>2</sub> or WO<sub>3</sub>-catalysts for photooxidation of sulfide and thiosulfate ions upon irradiation with visible light, 281

Oxvgen

Models of multivinyl free radical photopolymerization kinetics, 135

Phenacyl onium salts

Photoinitiated polymerization of methyl methacrylate by phenacyl type salts, 151

#### Phenol

Photocatalytic degradability of substituted phenols over UV irradiated TiO<sub>2</sub>, 61

#### Photobleaching

Primary processes of photodecomposition of 2-(5'-nitro-2'-furanyl)-ethenyl-4-{N-[4'-(N,N-diethylamino)-1'-methylbutyl] carbamoyl} quinoline. Effect of oxygen and compound concentration, 213

#### Photocatalysis

Photocatalytic degradation of gaseous benzene in air streams by using an optical fiber photoreactor, 47

Environmental remediation by an integrated microwave/UV-illumination technique. IV. Non-thermal effects in the microwave-assisted degradation of 2,4-dichlorophenoxyacetic acid in UV-irradiated TiO<sub>2</sub>/H<sub>2</sub>O dispersions, 289

#### Photocatalytic

A relation between the non-stoichiometry and hydroxyl radical generated at photocatalytic TiO<sub>2</sub> on 4CP decomposition, 301

## Photocatalytic degradation

Factors influencing the photocatalytic degradation of sulfonylurea herbicides by TiO<sub>2</sub> aqueous suspension, 71

## Photocatalytic detoxification

Phthalocyanine modified  $TiO_2$  or  $WO_3$ -catalysts for photooxidation of sulfide and thiosulfate ions upon irradiation with visible light, 281

#### Photocatalytic oxidation

Photocatalytic degradability of substituted phenols over UV irradiated  $TiO_2$ , 61

#### Photochromic

Synthesis and photochromism of *E,E*-3,4-(3,5-dimethoxybenzylidene)succinic anhydride and its infra red active 2-dicyanomethylene derivative 1

#### Photochromism

Synthesis and photochromism of *E,E-*3,4-(3,5-dimethoxybenzylidene)succinic anhydride and its infra red active 2-dicyanomethylene derivative.

New halogenated diphenyl-2*H*-benzo[*h*]chromene derivatives: synthesis and optical properties, 7

NMR characterization of allenyl-naphthol in the photochromic process of 3,3-diphenyl-[3*H*]-naphtho[2-1,b]pyran, 227

Photochromism of nitrospironaphthoxazines and spiroanthroxazine,

## Photocleavage

Investigation of cleavage processes in photoinitiators: from experiments to molecular modeling, 127

#### Photodegradation

Photocatalytic degradability of substituted phenols over UV irradiated TiO<sub>2</sub>, 61

Environmental remediation by an integrated microwave/UV-illumination technique. IV. Non-thermal effects in the microwave-assisted degradation of 2,4-dichlorophenoxyacetic acid in UV-irradiated TiO<sub>2</sub>/H<sub>2</sub>O dispersions, 289

#### Photo-Fenton

An innovative coupled solar-biological system at field pilot scale for the treatment of biorecalcitrant pollutants, 89

#### Photo-Fries rearrangement

Facile synthesis and photo-Fries rearrangement of 2-benzoyl-4-benzoyloxyphenol leading to dibenzoyldihydroxybenzene derivatives, 17

# Photoinduced charge carrier kinetics

Influence of chemical treatments on the photoinduced charge carrier kinetics of nanocrystalline porous TiO<sub>2</sub> films, 41

# Photoinitiated cationic polymerization

Anthracene electron-transfer photosensitizers for onium salt induced cationic photopolymerizations, 173

#### Photoinitiated polymerization

Photoinitiated polymerization of methyl methacrylate by phenacyl type salts, 151

#### Photoinitiation

Free radical macrophotoinitiators: an overview on recent advances, 103
The photoinitiation of MMA polymerization in the presence of iron complexes, 145

#### Photoinitiator

Investigation of cleavage processes in photoinitiators: from experiments to molecular modeling, 127

Anthracene electron-transfer photosensitizers for onium salt induced cationic photopolymerizations, 173

# Photolysis

Visible light and Fe(III)-mediated degradation of Acid Orange 7 in the absence of H<sub>2</sub>O<sub>2</sub>, 241

#### Photooxidation

Environmental remediation by an integrated microwave/UV-illumination technique. IV. Non-thermal effects in the microwave-assisted degradation of 2,4-dichlorophenoxyacetic acid in UV-irradiated TiO<sub>2</sub>/H<sub>2</sub>O dispersions, 289

#### Photopolymerisation

Free radical macrophotoinitiators: an overview on recent advances, 103

Models of multivinyl free radical photopolymerization kinetics, 135 Photoreactor

Photocatalytic degradation of gaseous benzene in air streams by using an optical fiber photoreactor, 47

#### Photoreduction

Transients in the photoreduction of dinitroarenes by triethylamine and *N*,*N*-dialkylanilines in benzene, 219

Effects of organic hole scavengers on the photocatalytic reduction of selenium anions, 273

#### Photoresists

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

## Photosensitization

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

Anthracene electron-transfer photosensitizers for onium salt induced cationic photopolymerizations, 173

# Phototherapy

Primary processes of photodecomposition of 2-(5'-nitro-2'-furanyl)-ethenyl-4-{N-[4'-(N,N-diethylamino)-1'-methylbutyl] carbamoyl} quinoline. Effect of oxygen and compound concentration, 213

## Photothermal spectroscopy

The interactions between tetrapyridyl porphyrin and viologen units covalently linked to polymers, 259

#### Phototransformation

Photodegradation of chlortoluron sensitised by iron(III) aquacomplexes,

# Phthalocyanine semiconductors

Phthalocyanine modified TiO<sub>2</sub> or WO<sub>3</sub>-catalysts for photooxidation of sulfide and thiosulfate ions upon irradiation with visible light, 281

# Pilot scale reactor

An innovative coupled solar-biological system at field pilot scale for the treatment of biorecalcitrant pollutants, 89

# Poly(ethylene terephthalate)

Ionic and excited species in irradiated poly(ethylene terephthalate) doped with pyrene, 23

#### Polyamine

Supramolecular interactions of hexacyanocobaltate(III) with polyamine receptors containing a terminal anthracene sensor, 253

# Polydispersity

Kinetic aspects of chitosan fragmentation by femtosecond laser, 207 Polymer

The interactions between tetrapyridyl porphyrin and viologen units covalently linked to polymers, 259

#### Polymer electrolyte

Performance and stability of TiO<sub>2</sub>/dye solar cells assembled with flexible electrodes and a polymer electrolyte, 33

#### Polymerization

Sulfur-containing initiators and coinitiators of free radical polymerization, 115

#### Porphyrin

The interactions between tetrapyridyl porphyrin and viologen units covalently linked to polymers, 259

#### Propagation

Kinetic studies of cationic photopolymerizations of phenyl glycidyl ether: termination/trapping rate constants for iodonium photoinitiators, 189

#### Pyrene

Ionic and excited species in irradiated poly(ethylene terephthalate) doped with pyrene, 23

# Quantum efficiency

Factors influencing the photocatalytic degradation of sulfonylurea herbicides by TiO<sub>2</sub> aqueous suspension, 71

#### Quantum yield

Photocatalytic degradation of gaseous benzene in air streams by using an optical fiber photoreactor, 47

Photochromism of nitrospironaphthoxazines and spiroanthroxazine, 233

#### Quenching by oxygen

Primary processes of photodecomposition of 2-(5'-nitro-2'-furanyl)-ethenyl-4-{N-[4'-(N,N-diethylamino)-1'-methylbutyl] carbamoyl} quinoline. Effect of oxygen and compound concentration, 213

#### Quinifuryl

Primary processes of photodecomposition of 2-(5'-nitro-2'-furanyl)-ethenyl-4-{N-[4'-(N,N-diethylamino)-1'-methylbutyl] carbamoyl} quinoline. Effect of oxygen and compound concentration, 213

## Radicals

Transients in the photoreduction of dinitroarenes by triethylamine and *N*,*N*-dialkylanilines in benzene, 219

## Radiothermoluminescence

Ionic and excited species in irradiated poly(ethylene terephthalate) doped with pyrene, 23

#### Redox potentials

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

# ReI

pH-dependent absorption and emission properties of a  $\rm Re^I$  complex working as a carboxylate ligand for  $\rm Cu^{2+}$ , 249

# Relaxation phenomena

Ionic and excited species in irradiated poly(ethylene terephthalate) doped with pyrene, 23

#### Selenate

Effects of organic hole scavengers on the photocatalytic reduction of selenium anions, 273

#### Selenite

Effects of organic hole scavengers on the photocatalytic reduction of selenium anions, 273

#### Simulation

Models of multivinyl free radical photopolymerization kinetics, 135 Solar photocatalysis

An innovative coupled solar-biological system at field pilot scale for the treatment of biorecalcitrant pollutants, 89

# Spirooxazine

Photochromism of nitrospironaphthoxazines and spiroanthroxazine, 233 Sulfide

Phthalocyanine modified TiO<sub>2</sub> or WO<sub>3</sub>-catalysts for photooxidation of sulfide and thiosulfate ions upon irradiation with visible light, 281

## Sulfonylurea degradation

Factors influencing the photocatalytic degradation of sulfonylurea herbicides by TiO<sub>2</sub> aqueous suspension, 71

#### Sulfur-containing initiator

Sulfur-containing initiators and coinitiators of free radical polymerization, 115

#### Supramolecular

Supramolecular interactions of hexacyanocobaltate(III) with polyamine receptors containing a terminal anthracene sensor, 253

#### Synthesis

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

#### Termination

Kinetic studies of cationic photopolymerizations of phenyl glycidyl ether: termination/trapping rate constants for iodonium photoinitiators, 189

## Thermal bleaching rate constant

New halogenated diphenyl-2*H*-benzo[*h*]chromene derivatives: synthesis and optical properties, 7

#### Thiosulfate

Phthalocyanine modified  $TiO_2$  or  $WO_3$ -catalysts for photooxidation of sulfide and thiosulfate ions upon irradiation with visible light, 281

Time-resolved microwave conductivity

Influence of chemical treatments on the photoinduced charge carrier

Influence of chemical treatments on the photoinduced charge carrier kinetics of nanocrystalline porous TiO<sub>2</sub> films, 41

# TiO<sub>2</sub>

Photocatalytic degradation of gaseous benzene in air streams by using an optical fiber photoreactor, 47

Factors influencing the photocatalytic degradation of sulfonylurea herbicides by TiO<sub>2</sub> aqueous suspension, 71

A relation between the non-stoichiometry and hydroxyl radical generated at photocatalytic TiO<sub>2</sub> on 4CP decomposition, 301

## TiO<sub>2</sub> and Hammett constants

Photocatalytic degradability of substituted phenols over UV irradiated  ${\rm TiO_2},\,61$ 

#### TiO2/dye solar cell

Performance and stability of TiO<sub>2</sub>/dye solar cells assembled with flexible electrodes and a polymer electrolyte, 33

# Titanium dioxide

Effects of organic hole scavengers on the photocatalytic reduction of selenium anions, 273

Environmental remediation by an integrated microwave/UV-illumination technique. IV. Non-thermal effects in the microwave-assisted degradation of 2,4-dichlorophenoxyacetic acid in UV-irradiated  ${\rm TiO_2/H_2O}$  dispersions, 289

# Transient intermediates

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

# Transient photoconductivity decays

Influence of chemical treatments on the photoinduced charge carrier kinetics of nanocrystalline porous  ${\rm TiO_2}$  films, 41

#### Triplet state

Primary processes of photodecomposition of 2-(5'-nitro-2'-furanyl)-ethenyl-4-{N-[4'-(N,N-diethylamino)-1'-methylbutyl] carbamoyl} quinoline. Effect of oxygen and compound concentration, 213

Transients in the photoreduction of dinitroarenes by triethylamine and *N*,*N*-dialkylanilines in benzene, 219

Photochromism of nitrospironaphthoxazines and spiroanthroxazine, 233

The interactions between tetrapyridyl porphyrin and viologen units covalently linked to polymers, 259

#### Ultrafast laser

Kinetic aspects of chitosan fragmentation by femtosecond laser, 207

# UV curing

Anthracene-bound sulfonium salts: highly efficient photoinitiators for cationic polymerization. A new synthesis of sulfonium salts which avoids the use of silver salts, 161

# Viologen

The interactions between tetrapyridyl porphyrin and viologen units covalently linked to polymers, 259

## Visible light

Visible light and Fe(III)-mediated degradation of Acid Orange 7 in the absence of  $\rm H_2O_2,\ 241$ 

Phthalocyanine modified TiO<sub>2</sub> or WO<sub>3</sub>-catalysts for photooxidation of sulfide and thiosulfate ions upon irradiation with visible light, 281

## Wastewater treatment

An innovative coupled solar-biological system at field pilot scale for the treatment of biorecalcitrant pollutants, 89

#### Water treatment

Visible light and Fe(III)-mediated degradation of Acid Orange 7 in the absence of  $\rm H_2O_2,\ 241$ 

## Water-soluble photoinitiators

Free radical macrophotoinitiators: an overview on recent advances, 103

# Zwitterionic polymerization

Photoinitiated polymerization of methyl methacrylate by phenacyl type salts, 151