Subject Index

Cetvltrimethylammonium bromide Acceptor number solvent, dependence of the quenching of biacetyl singlets by olefins on, 255 Acridine dyes and thiopyronine, determination of the S*-T transition probabilities of by the method of sensitized delayed fluorescence, 19 Alkoxy radicals and alkyl radicals, a comparison of the reactivities of diethylhydroxylamine and thiols towards excited states of, 43 Detector Alkyl radicals and alkoxy radicals, a comparison of Deuterium the reactivities of diethylhydroxylamine and thiols towards excited Diacetylenes states of, 43 Amino acids a study of the inhibition of fluorescence of various 9-aminoacridines by, 203 9-Aminoacridines a study of the inhibition of fluorescence of by amino acids, 203 Asymmetric chemistry kinetic resolution of optically active molecules and, and the asymmetrically sensitized photolysis of trans-3,5-diphenylpyrazoline, 231 Azulene observation of a triplet state of gen-43 erated by energy transfer in solution, 169 Biacetyl singlet, quenching of by olefins, and its dependence on the solvent acceptor number, 255 n-Butyraldehyde and tributyl stannane, intermolecular primary processes of triplet 2pentanone with, 267 Carbon dioxide is CO₂ a good quencher of O₂($^{1}\Delta_{g}$)? A kinetic reappraisal, 311

fast kinetics of pyrene excimer formation in micelles of, 321 **Cyclic cleavage** of H_2O by visible light, analysis of mechanisms for, 121 Cycloheptatrienes substituted, photochemistry of, and the dependence of quantum yields for sigmatropic H shifts on the excitation energy, 261 Ge, for the near IR, 9 isotope effect of on intersystem crossing for pheophytins, 75 quantum yields of solid state polymerization of, 85 β -Dicarbonyl compounds photochemical H abstraction as a radiationless transition in the photoketonization of, 93 Diethvl ether photolysis of in the vapour phase by 184.9 nm radiation, 179 Diethylhydroxylamine and thiols, a comparison of the reactivities of towards excited states of alkoxy and alkyl radicals, Dimethyl ether photolysis of at 185 nm in aqueous solution: involvement of the hydroxymethyl radical, 289 Diphenylisobenzofuran and rubrene, the triplet state energies of, 331 trans-3,5-Diphenylpyrazoline asymmetrically sensitized photolysis of, and the kinetic resolution of optically active molecules and asymmetric chemistry, 231 Dipyrenylalkanes solvent effects on intramolecular excimer formation of, 215

© Elsevier Sequoia/Printed in Switzerland

Dyes

acridine, and thiopyronine, determination of the S*-T transition probabilities of by the method of sensitized delayed fluorescence, 19

Dynamic reactors

convectional, use of for photochemical synthesis, 67

Electronic relaxation

of the S₁ singlet state of hexafluorobiacetyl in the vapour phase, 297

Energy transfer

in solution, observation of a triplet state of azulene generated by, 169

- Excimer formation
 - intramolecular, of dipyrenylalkanes, solvent effects on, 215
 - pyrene, in micelles of cetyltrimethylammonium bromide, fast kinetics of, 321

Excited states

of alkoxy and alkyl radicals, a comparison of the reactivities of diethylhydroxylamine and thiols towards, 43

Fluorescence

- sensitized delayed, determination of the S*-T transition probabilities of some acridine dyes and of thiopyronine by the method of, 19
- of various 9-aminoacridines, a study of the inhibition of by amino acids, 203

Fluoroperoxo species

of transition metals, solid state decomposition studies of, and the photodecomposition of Rb₃Zr₂(O₂)₂F₇ · H₂O and Cs₃Zr₂(O₂)₂F₇ · 2H₂O, 1

Germanium

Ge detector for the near IR, 9

Halogenated alkanes

photochemical stability of atmospheric CF₂ClNO and CFCl₂NO, 249

- Hexafluorobiacety1
 - S₁ singlet, the electronic relaxation of in the vapour phase, 297

Hydrogen abstraction

photochemical, as a radiationless transition in the photoketonization of β -dicarbonyl compounds, 93 Hydrogen shifts sigmatropic, the dependence of quantum yields for on the excitation energy, and the photochemistry of substituted cycloheptatrienes, 261 Hydroperoxide radicals modulated photolysis of the O_3-H_2O vapour system, and the kinetics of the reaction of OH with, 147 Hydroxylamines reactivities of diethylhydroxylamine and thiols towards excited states of alkoxy and alkyl radicals: a comparison, 43 Hydroxyl radicals modulated photolysis of the O₃-H₂O vapour system, and the kinetics of the reaction with HO_2 of, 147 9-Hydroxymethylanthracene micelle-directed regioselective photodimerization of, 343 Hydroxymethyl radicals involvement of in the photolysis at

185 nm of dimethyl ether in aqueous solution, 289

Intersystem crossing for pheophytins, D isotope effect on, 75

1-Iodopropane

the photolysis of, 51

Isotope effect

- D, on intersystem crossing for pheophytins, 75
- Kinetics
 - is CO₂ a good quencher of O₂($^{1}\Delta_{g}$)? A reappraisal through, 311
 - fast, of pyrene excimer formation in micelles of cetyltrimethylammonium bromide, 321
 - of the reaction of OH with HO₂: modulated photolysis of the O₃-H₂O vapour system, 147
- Laser amplitude modulation continuous wave, picosecond time resolution by in a dual-beam luminescence experiment, 31
- Laser flash photolysis nanosecond, expanding the time resolution in experiments involving, 71

Luminescence

- dual-beam, experiments on using picosecond time resolution by a continuous wave laser amplitude modulation technique, 31
- Mechanisms
 - for the cyclic cleavage of H₂O by visible light, analysis of, 121
- Micelles
 - cetyltrimethylammonium bromide, fast kinetics of pyrene excimer formation in, 321
 - regioselective photodimerization of 9hydroxymethylanthracene directed by, 343
- β-Nicotinamide- adenine dinucleotide reduced, photochemical generation of (induced by visible light), 193
- 2-Nitroso-1-naphthol photoreduction of, 223
- Olefins
 - quenching of biacetyl singlets by, and its dependence on the solvent acceptor number, 255
- Oxygen
 - is CO₂ a good quencher of O₂($^{1}\Delta_{g}$)? A kinetic reappraisal, 311
- Ozone
 - modulated photolysis of the O₃-H₂O vapour system: kinetics of the reaction of OH with HO₂, 147
- 2-Pentanone
 - triplet, intermolecular primary processes of with tributyl stannane and *n*-butyraldehyde, 267
- Pheophytins
 - D isotope effect on intersystem crossing for, 75
- Phosphine
 - the 147 nm photolysis of PH₃-SiH₄ mixtures, 105
- Photoacoustic study
- of silica-silane coupling reagent interactions, 279
- **Photochemical generation**
- of reduced β-nicotinamide-adenine dinucleotide (induced by visible light), 193
- Photochemical stability
- of atmospheric CF₂ClNO and CFCl₂-NO, 249

Photochemical synthesis use of convectional dynamic reactors for. 67 Photochemistry of substituted cycloheptatrienes, and the dependence of quantum yields for sigmatropic H shifts on the excitation energy, 261 Photodecomposition of $Rb_3Zr_2(O_2)_2F_7 \cdot H_2O$ and Cs_3Zr_2 - $(O_2)_2 F_7 \cdot 2H_2O$, and solid state decomposition studies of fluoroperoxo species of transition metals, 1 Photodimerization micelle-directed regioselective, of 9hydroxymethylanthracene, 343 Photoketonization of β -dicarbonyl compounds, photochemical H abstraction as a radiationless transition in, 93 **Photolysis** asymmetrically sensitized, of trans-3,5diphenylpyrazoline, and the kinetic resolution of optically active molecules and asymmetric chemistry, 231of diethyl ether in the vapour phase by 184.9 nm radiation, 179 modulated, of the O_3-H_2O vapour system, and the kinetics of the reaction of OH with HO₂, 147 nanosecond laser flash, expanding the time resolution in experiments involving, 71 185 nm, of dimethyl ether in aqueous solution, and the involvement of the hydroxymethyl radical, 289 147 nm, of PH₃-SiH₄ mixtures, 105 of 1-iodopropane, 51 Photoreduction of 2-nitroso-1-naphthol, 223 Polymerization solid state, of diacetylenes, quantum yield of, 85 Primary processes intermolecular, of triplet 2-pentanone with tributyl stannane and nbutyraldehyde, 267 Propanes the photolysis of 1-iodopropane, 51 Pyrene excimer formation of in micelles of cetyltrimethylammonium bromide, fast kinetics of, 321

Quantum yields

for sigmatropic hydrogen shifts, the dependence of on the excitation energy, and the photochemistry of substituted cycloheptatrienes, 261 solid state polymerization, of diacetylenes, 85

Quencher

good, of $O_2({}^1\Delta_g)$, is CO_2 a? A kinetic reappraisal, 311

Quenching

of biacetyl singlets by olefins, and its dependence on the solvent acceptor number, 255

Radiationless transition

in the photoketonization of β -dicarbonyl compounds, photochemical H abstraction as a, 93

Reactivity

of diethylhydroxylamine and of thiols towards excited states of alkoxy and alkyl radicals, a comparison of, 43

Resolution

kinetic, of optically active molecules and asymmetric chemistry, and the asymmetrically sensitized photolysis of *trans*-3,5-diphenylpyrazoline, 231

Rubrene

Silane

the 147 nm photolysis of PH₃-SiH₄ mixtures, 105

photoacoustic study of silica-silane coupling reagent interactions, 279

Silicon

photoacoustic study of silica-silane coupling reagent interactions, 279 Singlet states

determination of the S^{*}-T transition

- probabilities of some acridine dyes and of thiopyronine by the method of sensitized delayed fluorescence, 19
- the electronic relaxation of the S_1 singlet state of hexafluorobiacetyl in the vapour phase, 297
- quenching of biacetyl singlets by olefins: dependence on the solvent acceptor number, 255

Solvent effects on intramolecular excimer formation of dipyrenylalkanes, 215 Stability and structure of the gas phase complex of SO_2 with H_2O , 347 Structure and stability of the gas phase complex of SO₂ with H₂O, 347 Sulphur dioxide structure and stability of the gas phase complex of SO_2 with H_2O_1 347 Synthesis photochemical, use of convectional dynamic reactors for, 67

Thiols

and diethylhydroxylamine, a comparison of the reactivities of towards excited states of alkoxy and alkyl radicals, 43

Thiopyronine

and some acridine dyes, determination of the S*-T transition probabilities of by the method of sensitized delayed fluorescence, 19

Time resolution

- of nanosecond laser flash photolysis experiments, expanding the, 71 picosecond, by a continuous wave
- laser amplitude modulation technique, in a dual-beam luminescence experiment, 31

Transition metals

solid state decomposition studies of fluoroperoxo species of, and the photodecomposition of Rb_3Zr_2 - $(O_2)_2F_7 \cdot H_2O$ and $Cs_3Zr_2(O_2)_2F_7 \cdot$ $2H_2O, 1$

Transition probabilities

S*-T, of some acridine dyes and of thiopyronine by the method of sensitized delayed fluorescence, determination of, 19

Tributyl stannane

- and *n*-butyraldehyde, intermolecular primary processes of triplet 2pentanone with, 267
- determination of the S*-T transition probabilities of some acridine dyes and of thiopyronine by the method of sensitized delayed fluorescence, 19

and diphenylisobenzofuran, the triplet state energies of, 331

intermolecular primary processes of triplet 2-pentanone with tributyl

stannane and *n*-butyraldehyde, 267 Triplet states

- observation of a triplet state of azulene generated by energy transfer in solution, 169
- the triplet state energies of rubrene and diphenylisobenzofuran, 331

Water

- analysis of mechanisms for the cyclic cleavage of H₂O by visible light, 121
- modulated photolysis of the O_3-H_2O vapour system: kinetics of the reaction of OH with HO₂, 147
- structure and stability of the gas phase complex of SO₂ with H₂O, 347