

Subject Index

- Absorption cross-sections**
for rotational transitions in the
 $A^2\Pi_i-X^2\Pi_i$ system of ClO, 439
- Absorption spectrum**
ultra-violet, of gaseous nitrous acid, 28
vacuum ultra-violet, of halogenated
methanes and ethanes, 375
- Absorption spectroscopy**
excited states of 6-nitro-8-methoxy-
2*H*-chromene studied by, 47
- Acetaldehyde vapour**
photo-oxidation of at 3130 Å, 111
- Acetylene**
excitation of SO₂ at 3600 - 4100 Å in
the presence of, 157
- Alcohols**
phosphorescence quenching of biacetyl
vapour by, 431
- Aliphatic ketones**
kinetics of type I photocleavage of, 1
- Alkyl ketones**
bearing γ -hydrogens, photochemistry
of, 173
- Allene**
photolysis of SO₂ in the presence of,
405
- Anthracene**
excimer emission from, 145
- Aromatic amines**
quenching of the triplet state of a dye
by, 43
- Aromatic hydrocarbons**
quenching of fluorescence of, by
tertiary derivatives of group V
elements, 317
- Aryl ketones**
in sensitizing biacetyl phosphorescence
in aqueous solution, 139
- Association reaction**
of SO₂ with hydroxyl radical, kinetics
of, 349
- Atomic resonance radiation**
kinetic study of ground state bismuth,
Bi ($6^4S_{3/2}$), by time-resolved
attenuation of, 325
- Azastilbenes**
photoisomerization of, induced by
inorganic anions, 309
- Azibenzil**
photolysis mechanism of, 103
- Azirines**
formation of, evidence from photolysis
of benz- and naphthisoxyals, 3
- Azo-aromatics**
excited state reactivity of, 309
- Benzene-ketones system**
sensitization in, by fluorescence
quenching, 229
- Benz-isoxazoles**
photolysis of, 365
- Biacetyl vapour**
phosphorescence quenching of, by
alcohols and iodides, 431
- Biradicals**
photogenerated, electron reduction of
paraquat dication by, 453
- Bismuth atoms**
ground state, kinetic study by time-
resolved attenuation of atomic
resonance radiation, 325
- Carbon disulphide**
gas-phase reactions of O₃ with, chemi-
luminescence of, 297
- Carbon tetrachloride**
gas-phase photodecomposition of, 265
- Chemiluminescence**
in gas-phase reactions of ozone with
cyanoacetylene, carbon disulphide
and thiophene, 297
of S₂, SO and SO₂ in SF₆ afterglows,
241
- Chlorine**
RKR Franck-Condon factors and
absorption cross-sections for
rotational transitions in the $A^2\Pi_i-$
 $X^2\Pi_i$ system of ClO, 439
- Chromophoric species**
in nylon-6.6, quenching of by halide
ions, 73
- Cis-2-butene**
choice of radical scavengers in the
photolysis of, 381
- Cyanine dyes**
triplet states of, and reactions of
electron transfer with their
participation, 199

- Cyanoacetylene**
gas-phase reactions of O₃ with, chemiluminescence of, 297
- Cyclohexane**
laser photolysis of indole in, 215
- Decomposition**
photochemical, of diimide in the gas phase, 253
- Degradation**
of nylon polymers, 337
- Dichloroacetic acid esters**
photolysis of in cyclohexane, 127
- Dichloroethylene molecules**
trans-cis isomerization of, 55
- Diimide**
photochemical decomposition of, in the gas phase, 253
- Dye**
quenching of triplet state of, by aromatic amines, 43
- Electron reduction**
of paraquat dication by photogenerated biradicals, 453
- Emission spectroscopy**
excited states of 6-nitro-8-methoxy-2*H*-chromene studied by, 47
- Enolization**
base-catalyzed, of ethyl acetoacetate in solution, effect of u.v. irradiation on, 91
- Erythrosin**
relaxation of, following picosecond excitation, 153
- Ethanes**
halogenated, vacuum u.v. absorption spectra of, 375
- Ethyl acetoacetate**
in solution, effect of u.v. irradiation on base-catalyzed enolization of, 91
- Ethyl chloride**
photolysis of at 147 nm, 77
- Excimer emission**
from anthracene and methyl colanthin, 145
- Excitation**
of SO₂ at 3600 - 4100 Å in the presence of acetylene, 157
- Excited states**
of 6-nitro-8-methoxy-2*H*-chromene studied by emission and absorption spectroscopy: correlation with photochromism of spirofurans, 47
- Flash photolysis**
of disperse dyes on poly(ethylene terephthalate): indolizine derivatives, 149
- Flash photolysis data**
for sequential first and second order reactions, 355
- Flash photolysis study**
of 5-nitroquinoline, 277
- Fluorenone**
triplet, photoreduction of by dabco, 355
- Fluorescence quenching**
of aromatic hydrocarbons, by tertiary derivatives of group V elements, 317
of NO₂, pressure independence of, 237
studies on the process of sensitization in the benzene-ketones system by, 229
- Fluorohydrocarbons**
formation of HF in mercury-sensitized photolysis of, 17
relative rate constants for the reactions of O(¹D) atoms with, 371
- Franck-Gondon factors**
RKR, for rotational transitions in the A²Π_g-X²Π_g system of ClO, 439
- Germanium**
primary and secondary processes in photolysis of GeH₃I, 193
- Heterocoerdianthrone**
kinetics of self-sensitizing photo-oxidation of, in the region of lower concentrations, 391
- Hydrogen fluoride**
formation of in mercury-sensitized photolysis of, 17
- γ-Hydrogens**
photochemistry of alkyl ketones bearing, 173
- Hydroxyl radical**
kinetics of association reaction of SO₂ with, 349
- Indole**
laser photolysis of, in cyclohexane, 215
- Indolizine derivatives**
lightfastness and flash photolysis of disperse dyes on poly(ethylene terephthalate): 149

- Inefficiency
of some aryl ketones in sensitizing biacetyl phosphorescence in aqueous solution, 139
- Iodides
phosphorescence quenching of biacetyl vapour by, 431
- Iodoform
laser induced photodecomposition of, 221
- Inorganic anions
photomerization of azastilbenes induced by, 309
- Irradiation
ultra-violet, effect on base-catalyzed enolization of ethyl acetoacetate in solution, 91
- Isomerization
trans-cis, of $C_2H_2Cl_2$ molecules, selective dissociation and the role of thermal processes in an intense i.r. laser field, 55
- Kinetic analysis
of flash photolysis data for sequential first and second order reactions, 355
- Kinetics
of association reaction of SO_2 with hydroxyl radical, 349
of self-sensitizing photo-oxidation of heterocoerdianthrone in the region of lower concentrations, 391
of type I photocleavage of aliphatic ketones, 1
- Kinetic study
of ground state bismuth atoms, Bi ($6^4S_{3/2}$), by time-resolved attenuation of atomic resonance radiation, 325
- Laser photolysis
of indole in cyclohexane, 215
- Lightfastness
of disperse dyes on poly(ethylene terephthalate): indolozine derivatives, 149
- Luminescence
of nylon polymers, 337
- Methanes
halogenated, vacuum u.v. absorption spectra of, 375
- Methyl colanthin
excimer emission from, 145
- Naphth-isoxazoles
photolysis of, 365
- Nitrites
photolysis of *t*-butyl, isopropyl and ethyl nitrites at 254 nm, 285
- Nitrogen oxides
excited state quenching by di-*t*-butyl NO, 301
pressure independence of fluorescence quenching of NO_2 , 237
relative rate constants for the reaction of $O(^1D)$ atoms with N_2O , 371
- 5-Nitroquinoline
flash photolysis study of, 277
- 6-Nitro-8-methoxy-2*H*-chromene
excited states of studied by emission and absorption spectroscopy: correlation with photochromism of spiropyrane, 47
- Nitrosyl chloride and nitryl chloride
gas-phase u.v. photoabsorption cross-sections for, 35
- Nitrous acid
gaseous, ultra-violet absorption spectrum of, 23
- Norrish II type reactions
quantum yields of scissions due to, 9
- Nylon-6.6
quenching of chromophoric species in, by halide ions, 73
- Nylon polymers
photo-oxidation of, involving phosphorescent species, 337
- Oxygen atoms
relative rate constants for the reactions of $O(^1D)$ atoms with fluorochlorocarbons and with N_2O , 371
- Ozone
gas-phase reactions of O_3 with cyanoacetylene, carbon disulphide and thiophene, chemiluminescence of, 297
- Ozone measurements
at 48 km, 147
- Paraquet bication
electron reduction of by photo-generated biradicals, 453

- 1,3-Pentadienes
 photolysis of SO₂ at 3130 Å in the presence of, 183
- 1-Pentene
 choice of radical scavengers in the photolysis of, 381
- Phosphorescence
 biacetyl, inefficiency of some aryl ketones in sensitizing, 139
 of 1,1,1-trifluoroacetone, 75
- Phosphorescence emission
 of PMMA matrices, 69
- Phosphorescence quenching
 of biacetyl vapour by alcohols and iodides, 431
- Photoabsorption cross-sections
 gas-phase u.v., for nitrosyl chloride and nitril chloride, 35
- Photocleavage
 type I, of aliphatic ketones, 1
- Photodecomposition
 gas-phase, of CCl₄, 265
 of diimide, 253
 laser induced, of iodoform, 221
- Photoisomerization
 of azastilbenes induced by inorganic anions, 309
- Photoluminescence
 of S₂, SO and SO₂ in SF₆ afterglows, 241
- Photolysis
 of benz- and naphth-isoxazoles: evidence for the intermediate formation of azirines, 365
 of *cis*-2-butene and 1-pentene at 147 nm, choice of radical scavengers, 381
 of some dichloroacetic acid esters in cyclohexane, 127
 of ethyl chloride (Freon 160) at 147 nm, 77
 of GeH₃I, primary and secondary processes in, 193
 mercury-sensitized, of fluorohydrocarbons, formation of HF in, 17
 of SO₂ in the presence of foreign gases, 157, 405
 of SO₂ at 3130 Å in the presence of 1,3-pentadienes, 183
 of *t*-butyl, isopropyl and ethyl nitrites at 254 nm, 285
- Photolysis mechanism
 of azibenzil, 103
- Photo-oxidation
 of CH₃CHO vapour at 3130 Å, 111
 of nylon polymers involving phosphorescent species, 337
- self-sensitizing, of heterocoordinated throns in the region of lower concentrations, kinetics of, 391
- Photoreduction
 of triplet fluorenone by dabco, 355
- PMMA matrices
 phosphorescence emission of, 69
- Polyacrylphenone
 photochemistry of oligomers, dimers and trimers of, 9
- Poly(ethylene terephthalate)
 lightfastness and flash photolysis of disperse dyes on, 149
- Pressure independence
 of fluorescence quenching of NO₂, 237
- Quantum yields
 of scissions due to Norrish II type reactions, 9
- Quenching
 of chromophoric species in nylon-6,6 by halide ions, 73
 excited state, by di-*t*-butyl nitroxide, 301
 of fluorescence of aromatic hydrocarbons by tertiary derivatives of group V elements, 317
 of triplet state of a dye by aromatic amines, 43
- Radical scavengers
 choice of in photolysis of *cis*-2-butene and 1-pentene at 147 nm, 381
- Rate constants
 of a photochemical system with three components, calculation of, 97
 relative, for the reactions of O(¹D) atoms with fluorochlorocarbons and with N₂O, 371
- Reactivity
 excited state, of azo-aromatics, 309
- Relaxation
 of erythrosin following picosecond excitation, 153
- Rotational transitions
 in the A²Π_i-X²Π_i system of ClO, RKR Franck-Condon factors and absorption cross-sections for, 439
- Selective dissociation
 and *trans-cis* isomerization of C₂H₂Cl₂ molecules, 55

Sensitization

in the benzene–ketones system by fluorescence quenching, 229

Sulphur oxides

chemiluminescence and photoluminescence of S_2 , SO and SO_2 in SF_6 afterglows, 241

excitation of SO_2 at 3600 - 4100 Å in the presence of acetylene, 157

kinetics of association reaction of SO_2 with hydroxyl radical, 349

photolysis of SO_2 at 3130 Å in the presence of 1,3 pentadienes, 183

photolysis of SO_2 in the presence of allene, 405

Thermal processes

in an intense i.r. laser field, and *trans-cis* isomerization of $C_2H_2Cl_2$ molecules, 55

Thiophene

gas-phase reactions of O_3 with, chemiluminescence of, 297

1,1,1-Trifluoroacetone

phosphorescence of, 75

Triplet states

of cyanine dyes and reactions of electron transfer with their participation, 199