

Subject Index

- Absorption**
cross sections of, UV, of HO₂NO₂ vapour, 97
- Actinometer**
convenient, azobenzene as: evaluation values for UV Hg lines and for the N₂ laser line, 255
- Aluminas**
chromatographic, photochemistry of *trans*-stilbene adsorbed on, 263
- Amines**
saturated, fluorescence quenching of, in non-polar solution by various organic molecules, 147
- p*-Aminophenylthiyl radicals**
kinetics of the addition of to vinyl monomers, 13
- Aromatic ketones**
steric hindrance to energy transfer from ³(n,π*) and ³(π,π*) states of to dienes, 229
- Arylketones**
as triplet donors and quenchers: evidence for chemical quenching and reversible energy transfer, 241
- Azobenzene**
as a convenient actinometer: evaluation values for UV Hg lines and for the N₂ laser line, 255
- Benzoylpyridines**
photochemical and photophysical behaviour of: a proposal for σ values of benzoylpyridines in their excited states, 89
- Biacetyl**
and iodine, energy transfer between in the gas phase, 281
quenching of the triplet state ³A_u of by halogenated compounds, 59
temperature effects on the quenching of the triplet state ³A_u of, 185
- Bleaching**
of polyenes by oxygen: laser-induced degradation of polyvinyl chloride, 221
- Branching ratios**
of the N₂O reaction at 23 and -96 °C and measurements of the relative rate constants for the quenching of O(¹D) atoms by N₂O and N₂, 119
- Carbon monoxide**
the kinetics of CO oxidation sensitized by SF₅O radicals, 109
- Chalcone**
photoisomerization of: wavelength dependence, 193
- Chlorination reactions**
cyclic, induced by visible light with chlorocopper(II) complexes as mediators, 203
- Chlorocopper(II) complexes**
as mediators, cyclic chlorination reactions induced by visible light with, 203
- Chlorophyll a**
effect of reabsorption on the concentration dependence of fluorescence lifetimes of, 313
- Circularly polarized light**
transfer of optical activity from educt to product in the photolysis of *trans*-3,5-diphenylpyrazoline with: asymmetric photochemistry, 259
- Copper(II) complexes**
cyclic chlorination reactions induced by visible light with chlorocopper(II) complexes as mediators, 203
- Cross sections**
UV absorption, of HO₂NO₂ vapour, 97
- cis*-Cyclooctene**
quantum yields in the photolysis of at 185 nm, 159
- Degradation**
laser-induced, of polyvinyl chloride: oxygen bleaching of polyenes, 221
laser-induced, of polyvinyl chloride: quantum yield of dehydrochlorination, 213
- Dehydrochlorination**
quantum yield of: laser-induced degradation of polyvinyl chloride, 213
- Dienes**
steric hindrance to energy transfer from ³(n,π*) and ³(π,π*) states of aromatic ketones to, 229
- Difluoroamide radicals**
reactions forming electronically excited free radicals: formation of excited

- molecular states in the $H + NF_2$ reaction, 21
- 2,3-Diphenylindenone oxide**
transient species in the photochemical valence tautomerization of, 47
- trans-3,5-Diphenylpyrazoline**
transfer of optical activity from educt to product in the photolysis of with circularly polarized light: asymmetric photochemistry, 259
- Donors**
and quenchers, triplet, arylketones as: evidence for chemical quenching and reversible energy transfer, 241
- Electron spin resonance**
and optical spectroscopy, investigations of the reactions of active nitrogen with a few host-guest mixed polycrystals at 77 K using, 265
- Endoperoxides**
wavelength-dependent photochemistry of: the photolysis of endoperoxides of rubren, 85
- Energy transfer**
between biacetyl and iodine in the gas phase, 281
reversible, and chemical quenching, evidence for: arylketones as triplet donors and quenchers, 241
from $^3(n, \pi^*)$ and $^3(\pi, \pi^*)$ states of aromatic ketones to dienes, steric hindrance to, 229
- Excited states**
molecular, formation of in the $H + NF_2$ reaction: reactions forming electronically excited free radicals, 21
a proposal for σ values of benzoylpyridines in: photochemical and photophysical behaviour of benzoylpyridines, 89
- Fluorescence**
of chlorophyll a, effect of reabsorption on the concentration dependence of lifetimes of, 313
saturated amine, quenching of in non-polar solution by various organic molecules, 147
of substituted tetraphenylporphyrins, effect of quenching, 163
- Formaldehyde**
the free radical oxidation of CH_2O in the presence of NO_2 and NO , 131
- Formation**
of excited molecular states in the $H + NF_2$ reaction: reactions forming electronically excited free radicals, 21
- Free radicals**
oxidation of CH_2O by in the presence of NO_2 and NO , 131
electronically excited, reactions forming: formation of excited molecular states in the $H + NF_2$ reaction, 21
- Halogenated compounds**
quenching of the triplet state 3A_u of biacetyl by, 59
- Hexafluoropropene**
the kinetics of the gas phase photochlorination of, 303
- Hydrogen**
photoproduction of from reductive quenching of a water-soluble Zn porphyrin, 335
reactions forming electronically excited free radicals: formation of excited molecular states in the $H + NF_2$ reaction, 21
- Iodine**
and biacetyl, energy transfer between in the gas phase, 281
- Isomerization**
Hg-photosensitized *cis-trans*, of olefins in the gas phase: physical chemistry experiments for the advanced undergraduate laboratory, 67
- Ketones**
aromatic, steric hindrance to energy transfer from $^3(n, \pi^*)$ and $^3(\pi, \pi^*)$ states of to dienes, 229
arylketones as triplet donors and quenchers: evidence for chemical quenching and reversible energy transfer, 241
- Kinetics**
of the addition of *p*-aminophenylthiyl radicals to vinyl monomers, 13
of CO oxidation sensitized by SF_5O radicals, 109
of the gas phase photochlorination of hexafluoropropene, 303
- Lasers**
azobenzene as a convenient actinometer: evaluation values for UV Hg lines and for the N_2 laser line, 255

- laser-induced degradation of polyvinyl chloride: oxygen bleaching of polyenes, 221
- laser-induced degradation of polyvinyl chloride: quantum yield of dehydrochlorination, 213
- Lifetimes**
- fluorescence, of chlorophyll a, effect of reabsorption on the concentration dependence of, 313
- Manganese**
- photochemistry of Mn porphyrins: the photoreduction of methyl viologen, 341
- Mercury**
- Hg-photosensitized *cis-trans* isomerization of olefins in the gas phase: physical chemistry experiments for the advanced undergraduate laboratory, 67
- Mercury lines**
- azobenzene as a convenient actinometer: evaluation values for UV Hg lines and for the N₂ laser line, 255
- Methyl pyruvate**
- singlet quenching of, 177
- Methyl viologen**
- the photoreduction of: photochemistry of Mn porphyrins, 341
- Molybdenum(VI)**
- solid state photochemistry and photochromism of oxalato complexes of Mo(VI), 169
- New methylene blue NN**
- photogalvanic cells with, 321
- Nitric oxide**
- the free radical oxidation of CH₂O in the presence NO₂ and NO, 131
- NO(A²Σ⁺) production by photodissociation of nitrites and of CF₃NO in the 1200 - 1700 Å region, 37
- Nitrites**
- and CF₃NO, photodissociation of, NO(A²Σ⁺) production by in the 1200 - 1700 Å region, 37
- Nitrogen**
- active, electron spin resonance and optical spectroscopic investigations of the reactions of with a few host-guest mixed polycrystals at 77 K, 265
- measurements of the relative rate constants for the quenching of O(¹D) atoms by N₂O and N₂ and the branching ratio of the N₂O reaction at 23 and -96 °C, 119
- Nitrogen dioxide**
- the free radical oxidation of CH₂O in the presence of NO₂ and NO, 131
- Nitrogen laser line**
- azobenzene as a convenient actinometer: evaluation values for UV Hg lines and for the N₂ laser line, 255
- Nitrosotrifluoromethane**
- and nitrites, photodissociation of, NO(A²Σ⁺) production by in the 1200 - 1700 Å region, 37
- Nitrous oxide**
- measurements of the relative rate constants for the quenching of O(¹D) atoms by N₂O and N₂ and the branching ratio of the N₂O reaction at 23 and -96 °C, 119
- Olefins**
- Hg-photosensitized *cis-trans* isomerization of in the gas phase: physical chemistry experiments for the advanced undergraduate laboratory, 67
- Optical activity**
- transfer of from educt to product in the photolysis of *trans*-3,5-diphenylpyrazoline with circularly polarized light: asymmetric photochemistry, 259
- Optical spectroscopy**
- and electron spin resonance, investigations of the reactions of active nitrogen with a few host-guest mixed polycrystals at 77 K using, 265
- Osmochrome**
- Os(OEP)[P(OMe)₃]₂, oxidative substitution reaction of in chlorinated solvents, 295
- Oxalato complexes**
- of Mo(VI), solid state photochemistry and photochromism of, 169
- Oxidation**
- CO, sensitized by SF₅O radicals, the kinetics of, 109
- free radical, of CH₂O in the presence of NO₂ and NO, 131
- oxidative substitution reaction of osmochrome Os(OEP)[P(OMe)₃]₂ in chlorinated solvents, 295
- Oxygen atoms**
- measurements of the relative rate constants for the quenching of O(¹D) atoms by N₂O and N₂ and the branching ratio of the N₂O reaction at 23 and -96 °C, 119

- Oxygen bleaching**
of polyenes: laser-induced degradation of polyvinyl chloride, 221
- Pentafluoro sulfoxide radicals**
the kinetics of CO oxidation sensitized by SF₅O radicals, 109
- Pernitric acid**
UV absorption cross sections of HO₂NO₂ vapour, 97
- Photochemical behaviour**
and photophysical behaviour of benzoylpyridines: a proposal for σ values of benzoylpyridines in their excited states, 89
- Photochemistry**
asymmetric: transfer of optical activity from educt to product in the photolysis of *trans*-3,5-diphenylpyrazoline with circularly polarized light, 259
of Mn porphyrins: the photoreduction of methyl viologen, 341
and photochromism, solid state, of oxalato complexes of Mo(VI), 169
of *trans*-stilbene adsorbed on chromatographic aluminas, 263
wavelength-dependent, of endoperoxides: the photolysis of endoperoxides of rubren, 85
- Photochlorination**
of hexafluoropropene, the kinetics of in the gas phase, 303
- Photochromism**
a flash photolysis investigation of photochromic triphenylformazan, 329
and photochemistry, solid state, of oxalato complexes of Mo(VI), 169
- Photodissociation**
of nitrites and of CF₃NO, NO(A²Σ⁺) production by in the 1200 - 1700 Å region, 37
- Photogalvanic cells**
new methylene blue NN in, 321
- Photoisomerization**
of chalcone: wavelength dependence, 193
- Photolysis**
of *cis*-cyclooctene at 185 nm, quantum yields in, 159
of *trans*-3,5-diphenylpyrazoline with circularly polarized light, transfer of optical activity from educt to product in: asymmetric photochemistry, 259
of endoperoxides of rubren: wavelength-dependent photochemistry of endoperoxides, 85
flash, investigation of photochromic triphenylformazan using, 329
- Photophysical behaviour**
and photochemical behaviour of benzoylpyridines: a proposal for σ values of benzoylpyridines in their excited states, 89
- Photoproduction**
of hydrogen from reductive quenching of a water-soluble Zn porphyrin, 335
- Photoreduction**
of methyl viologen: photochemistry of Mn porphyrins, 341
- Photosensitization**
Hg-photosensitized *cis-trans* isomerization of olefins in the gas phase: physical chemistry experiments for the advanced undergraduate laboratory, 67
- Polycrystals**
host-guest mixed, electron spin resonance and optical spectroscopic investigations of the reactions of active nitrogen with at 77 K, 265
- Polyenes**
oxygen bleaching of: laser-induced degradation of polyvinyl chloride, 221
- Polyvinyl chloride**
laser-induced degradation of: oxygen bleaching of polyenes, 221
laser-induced degradation of: quantum yield of dehydrochlorination, 213
- Porphyrins**
fluorescence quenching effect of substituted tetraphenylporphyrins, 163
Mn, photochemistry of: the photoreduction of methyl viologen, 341
water-soluble Zn, photoproduction of hydrogen from reductive quenching of, 335
- Pyrazolines**
asymmetric photochemistry: transfer of optical activity from educt to product in the photolysis of *trans*-3,5-diphenylpyrazoline with circularly polarized light, 259
- Quantum yields**
of dehydrochlorination: laser-induced degradation of polyvinyl chloride, 213
in the photolysis of *cis*-cyclooctene at 185 nm, 159
of reaction in solution, on the determination of, 1
- Quenchers**
and donors, triplet, arylketones as: evi-

dence for chemical quenching and reversible energy transfer, 241

Quenching

of fluorescence of substituted tetraphenylporphyrins, 163

of O(¹D) atoms by N₂O and N₂, measurements of the relative rate constants for, and the branching ratio of the N₂O reaction at 23 and -96 °C, 119

reductive, of a water-soluble Zn porphyrin, photoproduction of hydrogen from, 335

of saturated amine fluorescence in non-polar solution by various organic molecules, 147

of singlet states of methyl pyruvate, 177
of the triplet state ³A_u of biacetyl by halogenated compounds, 59

of the triplet state ³A_u of biacetyl, temperature effects on, 185

Rate constants

relative, for the quenching of O(¹D) atoms by N₂O and N₂ and the branching ratio of the N₂O reaction at 23 and -96 °C, measurements of, 119

Reabsorption

effect of on the concentration dependence of fluorescence lifetimes of chlorophyll a, 313

Reduction

photoproduction of hydrogen from reductive quenching of a water-soluble Zn porphyrin, 335

Rubren

the photolysis of endoperoxides of: wavelength-dependent photochemistry of endoperoxides, 85

Singlet states

of methyl pyruvate, quenching of, 177

Steric hindrance

to energy transfer from ³(n,π*) and

³(π,π*) states of aromatic ketones to dienes, 229

Stilbene

photochemistry of *trans*-stilbene adsorbed on chromatographic aluminas, 263

Substitution

oxidative, of osmochrome Os(OEP)-[P(OMe)₃]₂ in chlorinated solvents, 295

Tautomerization

photochemical valence, of 2,3-diphenylindene oxide, transient species in, 47

Tetraphenylporphyrins

substituted, fluorescence quenching effect of, 163

Transient species

in the photochemical valence tautomerization of 2,3-diphenylindene oxide, 47

Triphenylformazan

photochromic, a flash photolysis investigation of, 329

Triplet states

arylketones as triplet donors and quenchers: evidence for chemical quenching and reversible energy transfer, 241

steric hindrance to energy transfer from ³(n,π*) and ³(π,π*) states of aromatic ketones to dienes, 229

the ³A_u state of biacetyl: quenching of by halogenated compounds, 59

the ³A_u state of biacetyl: temperature effects on the quenching of, 185

Vinyl monomers

kinetics of the addition of *p*-aminophenylthiyl radicals to, 13

Zinc

photoproduction of hydrogen from reductive quenching of a water-soluble Zn porphyrin, 335