

SUBJECT INDEX

- Absorption
picosecond spectroscopy in of the fluorescent state of *trans*-thioindigo, 329
triplet-triplet, and photoionization of 4-pyrrolidinopyridine, 369
- Acetaldehyde
flash photolysis study of the photo-oxidation of at room temperature, 299
- Acidity constant
of β -carbolines in the ground and excited singlet states, 355
- Actinometer
solid state, based on the photorearrangement of azoxybenzene in poly(methyl methacrylate), 219
- Alkaloids
related, luminescence spectra of yohimbine, reserpine and, 171
- Alkenes
and alkynes, high pressure photolysis of, and calculation of the useful pressure range, 241
- Alkynes
and alkenes, high pressure photolysis of, and calculation of the useful pressure range, 241
- 6-Aminochrysene
excited state prototropism of, 163
- Aminoesters
excited, charge and energy transfer processes in, 343
- Analysis
of biexponential decay curves in flash photolysis, a quantitative approach to the, 17
- Anthracenes
polar 9-substituted, in micellar solutions, regioselective photodimerization of, 131
- Aryl cations
attempts to characterize, and diazonium salts in photochemistry, 269
- Arylvinylene thioamides
mechanism of photochemical reactions of, and the photoisomerization of 2-naphthylvinylenethioamide, 183
- Azobenzenes
substituted, lowest triplet state of, and an energy transfer investigation, 249
- Azoxybenzene
in poly(methyl methacrylate), a solid state actinometer based on the photorearrangement of, 219
- Biacetyl
photoreactions of with tetramethyl-1,3-dioxole and 1,1-diethoxyethene, and solvent dependence of the product quantum yield as an indication of the competition between product formation and ionic photodissociation, 319
- tert*-Butyl nitrite
very low pressure photolysis of, at 248 nm, 277
- β -Carbolines
in the ground and excited singlet states, acidity constants of, 355
- Characterization
of aryl cations, and diazonium salts in photochemistry, 269
- Charge transfer
and energy transfer processes in excited aminoesters, 343
photochemistry of 2,12-dimethyl-3,7,11,17-tetraazabicyclo[11,3,1]-heptadeca-1(17),2,11,13,15-pentacopper(II) involving, and photochemistry of Cu(II) macrocyclic complexes, 51
- Chloro-1-propane
photolysis of between 184.9 and 147 nm, 103
- Chromatography
high performance liquid, quantum yield determinations via in the photolysis of *r*-1,*c*-2,*t*-3,*t*-4-tetraphenylcyclobutane, 265
- Complexes
Cu(II) macrocyclic, photochemistry of, and the charge transfer photochemistry of 2,12-dimethyl-3,7,11,17-tetraazabicyclo[11,3,1]-heptadeca-1(17),2,11,13,15-pentacopper(II), 51

- Conformers
3-styrylquinoline, photophysical and photochemical study of, 149
- Continuous-wave laser
amplitude modulation of, development of picosecond time-resolved techniques by, and elimination of r.f. interference problems, 387
- Copolymer
and homopolymer of 2-methyl-1-phenyl-2-propen-1-one, wavelength dependence of the photodegradation of the, 73
- Copper
photochemistry of Cu(II) macrocyclic complexes: the charge transfer photochemistry of 2,12-dimethyl-3,7,11,17-tetraazabicyclo[11,3,1]-heptadeca-1(17),2,11,13,15-pentaenecopper(II), 51
- Cycloalkanones
a study of the phosphorescent triplet state of by pulse optically detected magnetic resonance, 335
- Cycloreversion
indirect evidence for the existence of several reaction channels leading to, and wavelength-dependent photochemistry of the endoperoxide of 1,4,9,10-tetraphenylanthracene, 379
- Decay
biexponential curves of, in flash photolysis, a quantitative approach to the analysis of, 17
- Derivatives
of 2-phenylindan-1,3-dione in polar and non-polar solvents, photo-reactions of, 61
- Development
of picosecond time-resolved techniques by continuous-wave laser amplitude modulation, and elimination of r.f. interference problems, 387
- Diazonium salts
in photochemistry, and attempts to characterize aryl cations, 269
- 1,1-Diethoxyethene
and tetramethyl-1,3-dioxole, photo-reactions of biacetyl with, and solvent dependence of the product quantum yield as an indication of the competition between product formation and ionic photodissociation, 319
- Dimethylformamide
photolysis of $K_3[Fe(C_2O_4)_3]$ in, 45
- 2,12-Dimethyl-3,7,11,17-tetraazabicyclo[11,3,1]heptadeca-1(17),2,11,13,15-pentaenecopper(II)
charge transfer photochemistry of, and photochemistry of Cu(II) macrocyclic complexes, 51
- Dye
effects of secondary chemical reactions upon the performance of in lasers, 117
- Elimination
of r.f. interference problems, and development of picosecond time-resolved techniques by continuous-wave laser amplitude modulation, 387
- Endoperoxide
1,4,9,10-tetraphenylanthracene, wavelength-dependent photochemistry of, and indirect evidence for the existence of several reaction channels leading to cycloreversion, 379
- Energy transfer
and charge transfer processes in excited aminoesters, 343
investigation of in the lowest triplet state of substituted azobenzenes, 249
and photon excitation from metastable rare gas atoms, fragmentation of methyl nitrite by, 1
- Ethyl bromide
two-channel competitive photodecomposition reaction of at 174.3 - 174.5 nm, 289
- Exciplex
quenching of as a method of investigating photochemical reaction mechanisms, 27
- Excitation
photon, and energy transfer from metastable rare gas atoms, fragmentation of methyl nitrite by, 1
two-photon UV, of SO_2 and laser-induced fluorescence from SO, 97
- Excited states
acidity constants of β -carboline in the ground and excited singlet states, 355
charge and energy transfer processes in excited aminoesters, 343
excited state prototropism of 6-amino-chrysenes, 163

- formation of e_{aq}^- from excited thionine and methylene blue in aqueous solutions, 233
- picosecond absorption spectroscopy of the fluorescent state of *trans*-thioindigo, 329
- Ferrioxalates
 - photolysis of $K_3[Fe(C_2O_4)_3]$ in dimethylformamide, 45
- Fluorescence
 - alkyl pyrene, quenching of by atactic and isotactic polystyrene, 283
 - laser-induced, from SO and two-photon UV excitation of SO_2 , 97
 - photophysics of some common standards of, 193
 - trans*-thioindigo, picosecond absorption spectroscopy of the, 329
- Formation
 - of e_{aq}^- from excited thionine and methylene blue in aqueous solutions, 233
 - product, and ionic photodissociation, solvent dependence of the product quantum yield as an indication of the competition between, and photoreactions of biacetyl with tetramethyl-1,3-dioxole and 1,1-dithoxyethene, 319
- Fragmentation
 - of methyl nitrite by photon excitation and energy transfer from metastable rare gas atoms, 1
- High performance liquid chromatography quantum yield determinations via in the photolysis of *r*-1,*c*-2,*t*-3,*t*-4-tetraphenylcyclobutane, 265
- Homopolymer
 - and copolymers of 2-methyl-1-phenyl-2-propen-1-one, wavelength dependence of the photodegradation of the, 73
- Hydrocarbons
 - fluorinated, photochemical reaction of molecular I_2 with, 311
- Interference
 - r.f., elimination of problems of, and development of picosecond time-resolved techniques by continuous-wave laser amplitude modulation, 387
- Investigations
 - energy transfer, of the lowest triplet state of substituted azobenzenes, 249
- Iodine
 - photochemical reaction of molecular I_2 with fluorinated hydrocarbons, 311
- Laser
 - continuous-wave, amplitude modulation of, development of picosecond time-resolved techniques by, and elimination of r.f. interference problems, 387
 - dye, effects of secondary chemical reactions upon the performance of, 117
 - two-photon UV excitation of SO_2 and fluorescence from SO induced by, 97
- Luminescence
 - of porphyrins and metalloporphyrins, and luminescence of P tetraphenylporphyrins, 37
 - from yohimbine, reserpine and related alkaloids, spectra of, 171
- Mechanisms
 - photochemical reaction, exciplex quenching as a method of investigating, 27
 - of photochemical reactions of aryl-vinylene thioamides, and the photoisomerization of 2-naphthylvinylethioamide, 183
- Metalloporphyrins
 - and porphyrins, luminescence of, and luminescence of P tetraphenylporphyrins, 37
- 8-Methoxypsoralen
 - the photocycloaddition reaction of with olefins, 83
- Methylene blue
 - and thionine, excited, formation of e_{aq}^- from in aqueous solutions, 233
- Methyl nitrite
 - fragmentation of by photon excitation and energy transfer from metastable rare gas atoms, 1
- 2-Methyl-1-phenyl-2-propen-1-one
 - wavelength dependence of the photodegradation of the homopolymer and copolymers of, 73

- Micelles
 regioselective photodimerization of polar 9-substituted anthracenes in solutions of, 131
- Modulation
 continuous-wave laser amplitude, development of picosecond time-resolved techniques by, and elimination of r.f. interference problems, 387
- 2-Naphthylvinylethioamide
 photoisomerization of, and the mechanism of photochemical reactions of arylvinylene thioamides, 183
- Olefins
 photocycloaddition reaction of 8-methoxypsoralen with, 83
- Performance
 of dye lasers, effects of secondary chemical reactions upon, 117
- 2-Phenylindan-1,3-dione
 derivatives of in polar and non-polar solvents, photoreactions of, 61
- 1-Phenylpyrrole
 flash photolysis study of, 257
- Phosphorescence
 triplet state, of cycloalkanones by pulse optically detected magnetic resonance, a study of, 335
- Phosphorus
 luminescence of porphyrins and metalloporphyrins: luminescence of P tetraphenylporphyrins, 37
- Photochemical reaction
 of arylvinylene thioamides, mechanism of, and the photoisomerization of 2-naphthylvinylethioamide, 183
 of molecular I₂ with fluorinated hydrocarbons, 311
- Photochemistry
 of Cu(II) macrocyclic complexes, and the charge transfer photochemistry of 2,12-dimethyl-3,7,11,17-tetraazabicyclo[11,3,1]heptadecan-1(17),2,11,13,15-pentaenecopper (II), 51
 diazonium salts in, and attempts to characterize aryl cations, 269
 and photophysics of 3-styrylquinoline conformers, a study of the, 149
 and reactions of arylvinylene thioamides and mechanism of the photoisomerization of 2-naphthylvinylethioamide, 183
 thioketone, problem of triplet self-quenching in, 141
 wavelength-dependent, of the endoperoxide of 1,4,9,10-tetraphenylanthracene, and indirect evidence for the existence of several reaction channels leading to cycloreversion, 379
- Photocycloaddition
 reaction by of 8-methoxypsoralen with olefins, 83
- Photodecomposition
 two-channel competitive reaction of C₂H₅Br by at 174.3 - 174.5 nm, 289
- Photodegradation
 of the homopolymer and copolymers of 2-methyl-1-phenyl-2-propen-1-one, wavelength dependence of the, 73
- Photodimerization
 regioselective, of polar 9-substituted anthracenes in micellar solutions, 131
- Photodissociation
 ionic, and product formation, solvent dependence of the product quantum yield as an indication of the competition between, and photo-reactions of biacetyl with tetramethyl-1,3-dioxole and 1,1-diethoxyethene, 319
- Photoionization
 and triplet-triplet absorption of 4-pyrrolidinopyridine, 369
- Photoisomerization
 of 2-naphthylvinylethioamide, and the mechanism of photochemical reactions of arylvinylene thioamides, 183
- Photolysis
 of chloro-1-propane between 184.9 and 147 nm, 103
 flash, of 1-phenylpyrrole, study of, 257
 flash, a quantitative approach to the analysis of biexponential decay curves in, 17
 flash, study by of the photo-oxidation of CH₃CHO at room temperature, 299
 high pressure, of alkenes and alkynes, and calculation of the useful pressure range, 241

- of $K_3[Fe(C_2O_4)_3]$ in dimethylformamide, 45
- of *r*-1,*c*-2,*t*-3,*t*-4-tetraphenylcyclobutane, and quantum yield determinations via high performance liquid chromatography, 265
- very low pressure, of *tert*-butyl nitrite at 248 nm, 277
- Photo-oxidation
 - of CH_3CHO at room temperature, a flash photolysis study of the, 299
- Photophysics
 - and photochemistry of 3-styrylquinoline conformers, a study of the, 149
 - of some common fluorescence standards, 193
- Photoreactions
 - of biacetyl with tetramethyl-1,3-dioxole and 1,1-diethoxyethene, and solvent dependence of the product quantum yield as an indication of the competition between product formation and ionic photodissociation, 319
 - of derivatives of 2-phenylindan-1,3-dione in polar and non-polar solvents, 61
- Photorearrangement
 - of azoxybenzene in poly(methyl methacrylate), a solid state actinometer based on the, 219
- Poly(methyl methacrylate)
 - a solid state actinometer based on the photorearrangement of azoxybenzene in, 219
- Polystyrene
 - atactic and isotactic, quenching of alkyl pyrene fluorescence by, 283
- Porphyrins
 - and metalloporphyrins, luminescence of, and luminescence of P tetraphenylporphyrins, 37
- Potassium
 - photolysis of $K_3[Fe(C_2O_4)_3]$ in dimethylformamide, 45
- Pressure
 - high, photolysis of alkenes and alkynes at, and calculation of the useful pressure range, 241
 - very low, photolysis of *tert*-butyl nitrite at 248 nm and, 277
- Prototropism
 - excited state, of 6-aminochrysene, 163
- Pulse optically detected magnetic resonance
 - study of the phosphorescent triplet state of cycloalkanones by, 335
- Pyrenes
 - alkyl, quenching of fluorescence of, by atactic and isotactic polystyrene, 283
- 4-Pyrrolidinopyridine
 - photoionization and triplet-triplet absorption of, 369
- Quantum yield
 - determinations of via high performance liquid chromatography in the photolysis of *r*-1,*c*-2,*t*-3,*t*-4-tetraphenylcyclobutane, 265
 - product, solvent dependence of as an indication of the competition between product formation and ionic photodissociation, and photoreactions of biacetyl with tetramethyl-1,3-dioxole and 1,1-diethoxyethene, 319
- Quenching
 - of alkyl pyrene fluorescence by atactic and isotactic polystyrene, 283
 - exciplex, as a method of investigating photochemical reaction mechanisms, 27
- Rare gases
 - metastable atoms of, fragmentation of methyl nitrite by photon excitation and energy transfer from, 1
- Regioselectivity
 - in photodimerization of polar 9-substituted anthracenes in micellar solutions, 131
- Reserpine
 - and yohimbine and related alkaloids, luminescence spectra of, 171
- R.f. interference
 - elimination of problems of, and development of picosecond time-resolved techniques by continuous-wave laser amplitude modulation, 387
- Self-quenching
 - triplet, in thioketone photochemistry, problem of, 141
- Singlet states
 - acidity constants of β -carbolines in the ground and excited singlet states, 355
- Solvent
 - dependence on of the product quantum yield as an indication of the competition between product formation and ionic photodisso-

- ciation, and photoreactions of biacetyl with tetramethyl-1,3-dioxole and 1,1-diethoxyethene, 319
 polar and non-polar, photoreactions of derivatives of 2-phenylindan-1,3-dione in, 61
- Spectroscopy**
 picosecond absorption, of the fluorescent state of *trans*-thioindigo, 329
- Spectrum**
 luminescence, of yohimbine, reserpine and related alkaloids, 171
- Standards**
 some common fluorescence, photo-physics of, 193
- 3-Styrylquinoline**
 conformers of, and a photophysical and photochemical study, 149
- Sulphur dioxide**
 two-photon UV excitation of, and laser-induced fluorescence from SO, 97
- Sulphur monoxide**
 two-photon UV excitation of SO₂ and laser-induced fluorescence from, 97
- Temperature**
 room, flash photolysis study of the photo-oxidation of CH₃CHO at, 299
- Tetramethyl-1,3-dioxole**
 and 1,1-diethoxyethene, photoreactions of biacetyl with, and solvent dependence of the product quantum yield as an indication of the competition between product formation and ionic photodissociation, 319
- 1,4,9,10-Tetraphenylanthracene**
 wavelength-dependent photochemistry of the endoperoxide of, and indirect evidence for the existence of several reaction channels leading to cycloreversion, 379
- r*-1,*c*-2,*t*-3,*t*-4-Tetraphenylcyclobutane
 photolysis of, and quantum yield determinations via high performance liquid chromatography, 265
- Tetraphenylporphyrins**
 P, luminescence of, and luminescence of porphyrins and metalloporphyrins, 37
- trans*-Thioindigo
 picosecond absorption spectroscopy of the fluorescent state of, 329
- Thioketones**
 the problem of triplet self-quenching in the photochemistry of, 141
- Thionine**
 and methylene blue, excited, formation of ϵ_{aq}^- from in aqueous solutions, 233
- Time-resolved techniques**
 picosecond, development of by continuous-wave laser amplitude modulation, and elimination of r.f. interference problems, 387
- Triplet states**
 the lowest triplet state of substituted azobenzenes: an energy transfer investigation, 249
 the problem of triplet self-quenching in thioketone photochemistry, 141
 a study of the phosphorescent triplet state of cycloalkanones by pulse optically detected magnetic resonance, 335
- UV excitation**
 two-photon, of SO₂ and laser-induced fluorescence from SO, 97
- Wavelength**
 dependence on of the photodegradation of the homopolymer and copolymers of 2-methyl-1-phenyl-2-propen-1-one, 73
 photochemistry dependent on of the endoperoxide of 1,4,9,10-tetraphenylanthracene, and indirect evidence for the existence of several reaction channels leading to cycloreversion, 379
- Yohimbine**
 and reserpine and related alkaloids, luminescence spectra of, 171