

INDEXES

Volume 9, 1980

The indexes in this issue cover
Volumes 1—9

(Figures in bold type refer to the volume number)

INDEX OF AUTHORS

- Aarons, L. J., 5, 359
 Ahluwalia, J. C., 2, 203
 Allen, N. S., 4, 533
 Ambroz, H. B., 8, 353
 Angyal, S. J., 9, 415
 Atkinson, D., 8, 475
 Baker, A. D., 1, 355
 Barber, B. E., 9, 143
 Bartlett, P. D., 5, 149
 Baxendale, J. H., 7, 235
 Beattie, I. R., 4, 107
 Bell, R. P., 3, 513
 Bentley, P. H., 2, 29
 Berkoff, C. E., 3, 273
 Bird, C. W., 3, 309
 Blandamer, M. J., 4, 55
 Blundell, T. L., 6, 139
 Boelens, H., 7, 167
 Bradshaw, T. K., 6, 43
 Braterman, P. S., 2, 271
 Breslow, R., 1, 553
 Brown, D. H., 9, 217
 Brown, I. D., 7, 359
 Brown, K. S., jun., 4, 263
 Brundle, C. R., 1, 355
 Buchanan, G. L., 3, 41
 Burdett, J. K., 3, 293; 7, 507
 Burgess, J., 4, 55
 Burrows, H. D., 3, 139
 Burtles, S. M., 7, 201
 Butterworth, K. R., 7, 185
 Cadogan, J. I. G., 3, 87
 Carabine, M. D., 1, 411
 Cardin, D. J., 2, 99
 Carless, H. A. J., 1, 465
 Casellato, U., 8, 199
 Cetinkaya, B., 2, 99
 Chamberlain, J., 4, 569
 Chatt, J., 1, 121
 Chivers, T., 2, 233
 Clark, G. M., 5, 269
 Collins, C. J., 4, 251
 Colvin, E. W., 7, 15
 Connor, J. N. L., 5, 125
 Corfield, G. C., 1, 523
 Cornforth, J. W., 2, 1
 Cotton, F. A., 4, 27
 Coulson, E. H., 1, 495
 Cowan, J. M., 8, 419
 Cox, B. G., 9, 381
 Coyle, J. D., 1, 465; 3, 329; 4, 523
 Cragg, G. M. L., 6, 393
 Cramer, R. D., 3, 273
 Crammer, B., 6, 431
 Cross, R. J., 2, 271; 9, 185
 Curthoys, G., 8, 475
 Dack, M. R. J., 4, 211
 Dainton, F. S., 4, 323
 Dalton, H., 8, 297
 Davies, D. I., 8, 171
 de Rijke, D., 7, 167
 de Valois, P. J., 7, 167
 Dobson, J. C., 5, 79
 Dowle, M. D., 8, 171
 Doyle, M. J., 2, 99
 Drummond, I., 2, 233
 Dunkin, I. R., 9, 1
 Elliott, M., 7, 473
 Emsley, J., 9, 91
 Eschenmoser, A., 5, 377
 Evans, D. A., 2, 75
 Fenby, D. V., 3, 193
 Fenton, D. E., 6, 325; 8, 199
 Ferguson, L. N., 4, 289
 Fisher, L. R., 6, 25
 Flygare, W. H., 6, 109
 Forage, A. J., 8, 309
 Fox, M. F., 9, 143
 Fry, A., 1, 163
 Funk, R. L., 9, 41
 Garson, M. J., 8, 539
 Georghiou, P. E., 6, 83
 Gibson, K. H., 6, 489
 Gillespie, R. J., 8, 315
 Goodings, E. P., 5, 95
 Gray, B. F., 5, 359
 Green, C. L., 2, 75
 Greenhill, J. V., 6, 277
 Greenwood, N. N., 3, 231
 Grey Morgan, C., 8, 367
 Griffiths, J., 1, 481
 Grossert, J. S., 1, 1
 Groves, J. K., 1, 73
 Guilford, H., 2, 249
 Gutteridge, N. J. A., 1, 381
 Haines, R. J., 4, 155
 Hall, G. G., 2, 21
 Hall, L. D., 4, 401
 Hall, T. W., 5, 431
 Halliwell, H. F., 3, 373
 Hamdan, I. Y., 8, 143
 Hamer, G., 8, 143
 Harmony, M. D., 1, 211
 Harris, K. R., 5, 215
 Harris, R. K., 5, 1
 Hartley, F. R., 2, 163
 Hartshorn, S. R., 3, 167
 Hathway, D. E., 9, 63, 241
 Henderson, J. W., 2, 397
 Hepler, L. G., 3, 193
 Hilburn, M. E., 8, 63
 Hinchliffe, A., 5, 79
 Hore, P. J., 8, 29
 Horton, E. W., 4, 589
 Hudson, M. F., 4, 363
 Huntress, W. T., jun., 6, 295
 Hutchinson, D. W., 6, 43
 Ikan, R., 6, 431
 Isaacs, N. S., 5, 181
 Isbell, H. S., 3, 1
 Jaffé, H. H., 5, 165
 James, A. M., 8, 389
 Jamieson, A. M., 2, 325
 Janes, N. F., 7, 437
 Jenkins, J. A., 6, 139
 Johnson, A. W., 4, 1; 9, 125
 Johnson, S. P., 5, 441
 Johnstone, A. H., 7, 317; 9, 365
 Joslin, C. G., 8, 29
 Jotham, R. W., 2, 457
 Kalyanasundaram, K., 7, 453
 Keenan, A. G., 8, 259
 Kemp, T. J., 3, 139; 8, 353
 Kennedy, J. F., 2, 355; 8, 221
 Kennewell, P. D., 4, 189; 9, 477
 Kenny, A. W., 4, 90
 King, G. A. M., 7, 297
 Kirby, G. W., 6, 1

- Kitaigorodsky, A. I., 7, 133
 Koch, K. R., 6, 393
 Kolar, G. F., 9, 241
 Kresge, A. J., 2, 475
 Krishnaji, 7, 219
 Lappert, M. F., 2, 99
 Lee-Ruff, E., 6, 195
 Leigh, G. J., 1, 121; 4, 155
 Lemieux, R. U., 7, 423
 Leznoff, C. C., 3, 65
 Lindoy, L. F., 4, 421
 Linford, R. G., 1, 445
 Lipscomb, W. N., 1, 319
 Lynch, J. M., 3, 309
 Lythgoe, B., 9, 449
 McKean, D. C., 7, 399
 McKellar, J. F., 4, 533
 McKervey, M. A., 3, 479
 Mackie, R. K., 3, 87
 McLauchlan, K. A., 8, 29
 McNab, H., 7, 345
 Maitland, G. C., 2, 181
 Manning, P. G., 5, 233
 Maret, A. R., 2, 325
 Maslowsky, E., 9, 25
 Mason, R., 1, 431
 Mayo, B. C., 2, 49
 Meadowcroft, A. E., 4, 99
 Menger, H. W., 2, 415
 Midgley, D., 4, 549
 Millen, D. J., 5, 253
 Mills, R., 5, 215
 Moore, H. W., 2, 415
 Morley, R., 5, 269
 Morris, J. H., 6, 173
 Mulheirn, L. F., 1, 259
 Munn, A., 4, 87
 Newman, J. F., 4, 77
 Nightingale, W. H., 7, 195
 Norman, R. O. C., 8, 1
 North, A. M., 1, 49
 Oakenfull, D. G., 6, 25
 Overton, K. H., 8, 447
 Page, M. I., 2, 295
 Perkins, P. G., 6, 173
 Pletcher, D., 4, 471
 Poliakoff, M., 3, 293; 7, 527
 Prakash, V., 7, 219
 Pratt, A. C., 6, 63
 Ramm, P. J., 1, 259
 Rao, C. N. R., 5, 297
 Ratledge, C., 8, 283
 Rattee, I. D., 1, 145
 Redl, G., 3, 273
 Richards, D. H., 6, 235
 Ritich, J. B., jun., 5, 452
 Roberts, M. W., 6, 373
 Robinson, F. A., 5, 317
 Roche, M., 5, 165
 Rodgers, M. A. J., 7, 235
 Rose, A. E. A., 6, 173
 Rouvray, D. H., 3, 355
 Rowlinson, J. S., 7, 329
 Sanders, J. K. M., 6, 467
 Sarma, T. S., 2, 203
 Satchell, D. P. N., 4, 231; 6, 345
 Satchell, R. S., 4, 231
 Schlegel, W., 7, 177
 Senthilnathan, V. P., 5, 297
 Shorter, J., 7, 1
 Simpson, T. J., 4, 497
 Singh, S., 5, 297
 Smith, E. B., 2, 181
 Smith, K., 3, 443
 Smith, K. M., 4, 363
 Smith, W. E., 6, 173; 9, 217
 Snell, K. D., 8, 259
 Stacey, M., 2, 145
 Staunton, J., 8, 539
 Stevens, M. F. G., 7, 377
 Stoddart, J. F., 8, 85
 Suckling, C. J., 3, 387
 Suckling, K. E., 3, 387
 Sutherland, J. K., 9, 265
 Sutherland, R. G., 1, 241
 Sutton, D., 4, 443
 Swan, J. S., 7, 201
 Swindells, R., 7, 212
 Symons, M. C. R., 5, 337
 Takken, H. J., 7, 167
 Taylor, J. B., 4, 189; 9, 477
 Theobald, D. W., 5, 203
 Thomas, T. W., 1, 99
 Thompson, M., 1, 355
 Thornber, C. W., 8, 563
 Tinncknell, R. C., 5, 463
 Toennies, J. P., 3, 407
 Tolman, C. A., 1, 337
 Truax, D. R., 5, 411
 Twitchett, H. J., 3, 209
 Tyman, J. H. P., 8, 499
 Underhill, A. E., 1, 99; 9, 429
 van Dort, J. M., 7, 167
 van der Linde, L. M., 7, 167
 Vaughan, K., 7, 377
 Vidali, M., 8, 199
 Vigato, P. A., 8, 199
 Vollhardt, K. P. C., 9, 41
 Wain, R. L., 6, 261
 Walker, E. R. H., 5, 23
 Walker, I. C., 3, 467
 Waltz, W. L., 1, 241
 Ward, I. M., 3, 231
 Watkins, D. M., 9, 429
 White, A. J., 3, 17
 Whitfield, R. C., 1, 27
 Wieser, H., 5, 411
 Wiesner, K., 6, 413
 Williams, G., 7, 89
 Williams, R. J. P., 9, 281, 325
 Wilson, A. D., 7, 265
 Yoffe, A. D., 5, 51

INDEX OF TITLES

- Absorption bands in the spectra of stars, a crystal field approach, 5, 233
- Acidity of solid surfaces, 8, 475
- Across the living barrier, 6, 325
- Acylation by ketens and isocyanates, a mechanistic comparison, 4, 231
- Acylation, Friedel-Crafts, of alkenes, 1, 73
- Adamantane rearrangements, 3, 379
- Affinity chromatography, chemical aspects of, 3, 249
- Alcohols and amines, conformational analysis of, 5, 411
- Alkali-metal complexes in aqueous solution, 4, 549
- Alkaloids, aconite, synthesis of, 6, 413
- Alkenes, the Friedel-Crafts acylation of, 1, 73
- Aluminium phosphates, the chemistry and binding properties of, 6, 173
- Amines and alcohols, conformational analysis of, 5, 411
- Aphids and scale insects, their chemistry, 4, 263
- Application of electrochemical techniques to the study of homogeneous chemical reactions, 4, 471
- Applications of e.s.r. spectroscopy to kinetics and mechanism in organic chemistry, 8, 1
- Application of research findings to the development of commercial flavourings, 7, 177
- Aqueous mixtures, kinetics of reactions in, 4, 55
- Aqueous solution, micelles in, 6, 25
- Aryl cations—new light on old intermediates, 8, 353
- Aryldiazonium cations, co-ordination chemistry of, 4, 443
- Atmosphere, interactions in, of droplets and gases, 1, 411
- Autocatalysis, 7, 297
- Azidoquinones and related compounds, chemistry of, 2, 415
- Azobenzene and its derivatives, photochemistry of, 1, 481
- Bile pigments, 4, 363
- Binding of heavy metals to proteins, 6, 139
- Binding properties and chemistry of aluminium phosphates, 6, 173
- Biological surfaces, molecular aspects of, 8, 389
- Biomimetic chemistry, 1, 553
- Biosynthesis of sterols, 1, 259
- Biosynthetic products from arachidonic acid, 6, 489
- studies, carbon-13 nuclear magnetic resonance in, 4, 497
- Blood groups, human, and carbohydrate chemistry, 7, 423
- Bond strengths, CH, in simple organic compounds: effects of conformation and substitution, 7, 399
- valences—a simple structural model for inorganic chemistry, 7, 359
- Bredt's rule, 3, 41
- Brønsted relation—recent developments, 2, 475
- Butadiene, polymerization and copolymerization of, 6, 235
- Calciferols, hormonal: chemistry of 'vitamin' D 6, 83
- Calorimetric investigations of hydrogen bond and charge transfer complexes, 3, 193
- Cancer and chemicals, 4, 289
- Carbohydrate chemistry and human blood groups, 7, 423
- Carbohydrate-directed macromolecules, transition-metal oxide chelates of, 8, 221
- Carbohydrate-protein complexes, glycoproteins, and proteoglycans, of human tissues, chemical aspects of, 2, 355
- Carbohydrates to enzyme analogues, 8, 85
- Carbon-13 nuclear magnetic resonance in biosynthetic studies, 4, 497
- Carbonium ions, carbanions, and radicals, chirality in, 2, 397
- Carbonyl compounds, photochemistry of, 1, 465
- Carcinogens, chemical, mechanisms of reaction with nucleic acid, 9, 241
- Catalysis and surface chemistry, new perspectives, 6, 373
- Catalysis, homogeneous, and organometallic chemistry, the 16 and 18 electron rule in, 1, 337

- of the olefin metathesis reaction, 4, 155
- CENTENARY LECTURE. Biomimetic chemistry, 1, 553
- CENTENARY LECTURE. Light scattering in pure liquids and solutions, 6, 109
- CENTENARY LECTURE. Quadruple bonds and other multiple metal to metal bonds, 4, 27
- CENTENARY LECTURE. Rotationally and vibrationally inelastic scattering of molecules, 3, 407
- CENTENARY LECTURE. Systematic development of strategy in the synthesis of polycyclic polysubstituted natural products: the aconite alkaloids, 6, 413
- CENTENARY LECTURE. Three-dimensional structures and chemical mechanisms of enzymes, 1, 319
- Charge transfer and hydrogen bond complexes, calorimetric investigations of, 3, 193
- Chemical applications of advances in Fourier transform spectroscopy, 4, 569
- aspects of affinity chromatography, 2, 249
- of glycoproteins, proteoglycans, and carbohydrate-protein complexes of human tissues, 2, 355
- education research: facts, findings, and consequences, 9, 365
- interpretations of molecular wavefunctions, 5, 79
- Chemically-induced dynamic electron polarization (CIDEP), role in chemistry, 8, 29
- Chemicals in rodent control, 1, 381
- which control plant growth, 6, 261
- Chemistry and binding properties of aluminium phosphates, 6, 173
- CHEMISTRY AND FLAVOUR**
- I Molecular Structure and Organoleptic Quality, 7, 167
- II Application of Research Findings to the Development of Commercial Flavourings, 7, 177
- III Safety Evaluation of Natural and Synthetic Flavourings, 7, 185
- IV The Influence of Legislation on Research in Flavour Chemistry, 7, 195
- V The Development of Flavour in Potable Spirits, 7, 201
- VI The Influence of Flavour Chemistry on Consumer Acceptance, 7, 212
- Chemistry and the new industrial revolution, 5, 317
- , —a topological subject, 2, 457
- of aphids and scale insects, 4, 263
- of azidoquinones and related compounds, 2, 415
- of dental cements, 7, 265
- of dyeing, 1, 145
- of the gold drugs used in the treatment of rheumatoid arthritis, 9, 217
- of homonuclear sulphur species, 2, 233
- of long-chain phenols of non-isoprenoid origin, 8, 499
- of the production of organic isocyanates, 3, 209
- of transition-metal carbene complexes and their role as reaction intermediates, 2, 99
- of 'vitamin' D: the hormonal calciferols, 6, 83
- , some considerations on the philosophy of, 5, 203
- Chirality in carbonium ions, carbanions, and radicals, 2, 397
- Chlorophyll chemistry, n.m.r. spectral change as a probe, 6, 467
- Chromatography, affinity, chemical aspects of, 2, 249
- Cis-* and *trans-*effects of ligands, 2, 163
- Clathrates and molecular inclusion phenomena, 7, 65
- Collisional transfer of rotational energy and spectral lineshapes, 7, 219
- Compartmental ligands: routes to homo- and hetero-dinuclear complexes, 8, 199
- Complex formation between sugars and metal cations, 9, 415
- hydride reducing agents, the functional group selectivity of, 5, 23
- Complexes, alkali-metal, in aqueous solution, 4, 549
- , homo- and hetero-dinuclear, routes *via* compartmental ligands, 8, 199

Index

- Complexes, 1-D metallic, 9, 429
—, square-planar, isomerization mechanisms of, 9, 185
Computer resolution of overlapping electronic absorption bands, 9, 143
Conductivity and superconductivity in polymers, 5, 95
Conformation and substitution, effects of, on individual CH bond strengths in simple organic compounds, 7, 399
— of rings and neighbouring group effects, development of Haworth's concepts of, 3, 1
Conformational analysis of some alcohols and amines: a comparison of molecular orbital theory, rotational and vibrational spectroscopy, 5, 411
— studies on small molecules, 1, 293
Contribution of ion-pairing to 'memory effects', 4, 251
Contributions of pulse radiolysis to chemistry, 7, 235
Conversion of ammonium cyanate into urea—a saga in reaction mechanisms, 7, 1
Co-ordination chemistry of aryldiazonium cations: aryldiazonato (aryldiazo) complexes of transition metals, and the aryldiazonato-nitrosyl analogy, 4, 443
Corrin synthesis, post-B₁₂ problems in, 5, 377
Crystal field approach to absorption bands in the spectra of stars, 5, 233
Crystals and molecules, organic, non-bonded interactions of atoms in, 7, 133
Cyclization, initiation of, using 3-methylcyclohex-2-enone derivatives, 9, 265
Cyclopolymerization, 1, 523
Dental cements, chemistry of, 7, 265
Development of flavour in potable spirits, 7, 201
Dielectric relaxation in polymer solutions, 1, 49
Diffusion in liquids, the effect of isotopic substitution on, 5, 215
Difluoroamino-radical, gas-phase kinetics of, 3, 17
Droplets and gases, interactions in the atmosphere of, 1, 411
Drug design, isosterism and molecular modification in, 8, 563
—, quantitative, 3, 273
Droplets and gases, interactions in the atmosphere of, 1, 411
Dyeing, chemistry of, 1, 145
Echinoderms, 1, 1
Education, chemical, a reassessment of research in, 1, 27
—, —, review of research and development in the U.K., 1972—1976, 7, 317
Effect of isotopic substitution on diffusion in liquids, 5, 215
Electrochemical techniques, application of to study of homogeneous chemical reactions, 4, 471
Electron as a chemical entity, 4, 323
— scattering spectroscopy, threshold, 3, 467
— spectroscopy, 1, 355
Electronic absorption bands, overlapping, computer resolution of, 9, 143
— properties of some chain and layer compounds, 5, 51
— transitions, vibrational intensities in, 5, 165
Electrons, solvated, in solutions of metals, 5, 337
Electrophilic aromatic substitutions, non-conventional, and related reactions, 3, 167
— C-nitroso-compounds, 6, 1
Elimination reactions, isotope effect studies of, 1, 163
Enaminones, 6, 277
Energetics of neighbouring group participation, 2, 295
Enumeration methods for isomers, 3, 355
Environmental lead in perspective, 8, 63
— protection in the distribution of hazardous chemicals, 4, 99
— regulation: an international view, 5, 431
Enzyme analogues from carbohydrates, 8, 85
Enzymes, immobilized, 6, 215
— in organic synthesis, 3, 387
—, the logic of working with, 2, 1

- , three-dimensional structures and chemical mechanisms of, 1, 319
- Enzymic reactions, stereochemical choice in, 8, 447
- E.s.r. spectroscopy, applications to kinetics and mechanism in organic chemistry, 8, 1
- Experimental studies on the structure of aqueous solutions of hydrophobic solutes, 2, 203
- FARADAY LECTURE. The electron as a chemical entity, 4, 323
- Fats grown from wastes, 8, 283
- Fe(CO)₄, 7, 527
- 5-Substituted pyrimidine nucleosides and nucleotides, 6, 43
- Fixation, of nitrogen, 1, 121
- Forces between simple molecules, 2, 181
- Foreign compounds in mammals, importance of non-enzymic chemical reaction processes to the rate of, 9, 63
- Formation of hydrocarbons by microorganisms, 3, 309
- Fourier transform spectroscopy, chemical applications of advances in, 4, 569
- Four-membered rings and reaction mechanisms, 5, 149
- Friedel-Crafts acylation of alkenes, 1, 73
- Functional group selectivity of complex reducing agents, 5, 23
- Gas-phase kinetics of the difluoro-amino-radical, 3, 17
- Gases, and droplets, interactions in the atmosphere of, 1, 411
- Glycoproteins, proteoglycans, and carbohydrate-protein complexes of human tissues, chemical aspects of, 2, 355
- Gold drugs used in the treatment of rheumatoid arthritis, chemistry of, 9, 217
- Growth of computational quantum chemistry from 1950 to 1971, 2, 21
- Handling toxic chemicals—environmental considerations, 4, 77
- HAWORTH MEMORIAL LECTURE. The consequences of some projects initiated by Sir Norman Haworth, 2, 145
- HAWORTH MEMORIAL LECTURE. The Haworth-Hudson controversy and the development of Haworth's concepts of ring conformation and of neighbouring group effects, 3, 1
- HAWORTH MEMORIAL LECTURE. Human blood groups and carbohydrate chemistry, 7, 507
- Hazards in the chemical industry—risk management and insurance, 8, 419
- Health hazards to workers from industrial chemicals, 4, 82
- Homogeneous catalysis, and organometallic chemistry, the 16 and 18 electron rule in, 1, 337
- Homogeneous chemical reactions, application of electrochemical techniques to the study of, 4, 471
- Human blood groups and carbohydrate chemistry, 7, 423
- Hydrocarbon formation by microorganisms, 3, 309
- Hydrogen bond and charge transfer complexes, calorimetric investigations of, 3, 193
- bonding, very strong, 9, 91
- isotope effects, kinetic, recent advances in the study of, 3, 513
- Hydrophobic solutes, experimental studies on the structure of aqueous solutions of, 2, 203
- Imines, photochemistry of, 6, 63
- Immobilized enzymes, 6, 215
- Importance of (non-enzymic) chemical reaction processes to the fate of foreign compounds in mammals, 9, 63
- Importance of solvent internal pressure and cohesion to solution phenomena, 4, 211
- Inclusion phenomena, molecular, and clathrates, 7, 65
- Individual CH bond strengths in simple organic compounds: effects of conformation and substitution, 7, 399
- Industry, chemical, hazards in: risk management and insurance, 8, 419
- Influence of flavour chemistry on consumer acceptance, 7, 212
- Influence of legislation on research in flavour chemistry, 7, 195

Index

- Infrared and Raman vibrational spectroscopy in inorganic chemistry, 4, 107
- INGOLD LECTURE. Four-membered rings and reaction mechanisms, 5, 149
- Initiation of cyclization using 3-methylcyclohex-2-enone derivatives, 9, 265
- Inorganic chemistry, bond valences, a simple structural model for, 7, 359
- Inorganic pyro-compounds
M_a[(X₂O₇)_b], 5, 269
- Insect attractants of natural origin, 2, 75
- Insecticides, a new group of: synthetic pyrethroids, 7, 473
- Interactions in the atmosphere of droplets and gases, 1, 411
- , ion-solvent, thermodynamics of, 9, 381
- , metal-metal, in transition-metal complexes containing infinite chains of metal atoms, 1, 99
- , non-bonded, of atoms in organic crystals and molecules, 7, 133
- Introducing a new agricultural chemical, 4, 77
- Ion-molecule reactions in the evolution of simple organic molecules in interstellar clouds and planetary atmospheres, 6, 295
- Ion-pairing, contribution to 'memory effects', 4, 251
- Ion-solvent interactions, thermodynamics of, 9, 381
- Isocyanates and ketens, a mechanistic comparison of acylation by, 4, 231
- , organic, chemistry of the production of, 3, 209
- Isomer enumeration methods, 3, 355
- Isomerization mechanisms of square-planar complexes, 9, 185
- Isosterism and molecular modification in drug design, 8, 563
- Isotope effect studies of elimination reactions; 1, 163
- Isotopic substitution effects on diffusion in liquids, 5, 215
- JOHN JEVES LECTURE. Chemicals which control plant growth, 6, 261
- KELVIN LECTURE. Across the living barrier, 6, 325
- Ketens and isocyanates, a mechanistic comparison of acylation by, 4, 231
- Kinetics and mechanism in organic chemistry, applications of e.s.r. spectroscopy to, 8, 1
- , gas-phase, of the difluoroamino-radical, 3, 17
- of reactions in aqueous mixtures, 4, 55
- β-Lactams, synthetic routes to, 5, 181
- Lanthanide shift reagents in nuclear magnetic resonance spectroscopy, 2, 49
- Laser light scattering, quasielastic, 2, 325
- Laser spectroscopy of ultra-trace quantities, 8, 367
- Lasers, tunable, 3, 293
- Lead, environmental, in perspective, 8, 63
- Ligands, *cis*- and *trans*-effects of, 2, 163
- , compartmental: routes to homo- and hetero-dinuclear complexes, 8, 199
- Liquid, surface of, 7, 329
- LIVERSIDGE LECTURE. On first looking into nature's chemistry:
- I The rôle of small molecules and ions: the transport of elements, 9, 281
- II The rôle of large molecules, especially proteins, 9, 325
- LIVERSIDGE LECTURE. Recent advances in the study of kinetic hydrogen isotope effects, 3, 513
- LIVERSIDGE LECTURE. The surface of a liquid, 7, 329
- Macrocyclic ligands, synthetic, transition-metal complexes of, 4, 421
- Main-group elements, ring, cage, and cluster compounds of, 8, 315
- Matrix isolation technique and its application to organic chemistry, 9, 1
- Mechanisms, chemical, and three-dimensional structures of enzymes, 1, 319
- , isomerization, of square-planar complexes, 9, 185
- of reaction between ultimate chemical carcinogens and nucleic acid, 9, 241

- MELDOLA MEDAL LECTURE. Chemical aspects of glycoproteins, proteoglycans, and carbohydrate-protein complexes of human tissues, 2, 355
- MELDOLA MEDAL LECTURE. $\text{Fe}(\text{CO})_4$, 7, 527
- MELDOLA MEDAL LECTURE. Molecular collisions and the semiclassical approximation, 5, 125
- MELDOLA MEDAL LECTURE. Molecular Shapes, 7, 507
- MELDOLA MEDAL LECTURE. N.m.r. spectral change as a probe of chlorophyll chemistry, 6, 467
- Meldrum's acid, 7, 345
- Metal-ion-promoted reactions of organo-sulphur compounds, 6, 345
- 1-D Metallic complexes, 9, 429
- Metalloboranes and metal-metal bonding, 3, 231
- Metal-metal bonding and metalloboranes, 3, 231
- bonds, multiple (especially quadruple), 4, 27
- interactions in transition-metal complexes containing infinite chains of metal atoms, 1, 99
- Metals, binding to proteins, 6, 139
- Micelle-forming surfactant solutions, photophysics of molecules in, 7, 453
- Micelles in aqueous solution, 6, 25
- Microbes, use in the petrochemical industry, 8, 297
- Micro-organisms, protein production by, 8, 143
- Molecular aspects of biological surfaces, 8, 389
- collisions and the semiclassical approximation, 5, 125
- orbital theory, comparison with rotational and vibrational spectroscopy in conformational analysis of alcohols and amines, 5, 411
- shapes, 7, 507
- structure and organoleptic quality, 7, 167
- wavefunctions, chemical interpretations of, 5, 79
- Monoalkyltriazenes, 7, 377
- Motion, molecular, and time-correlation functions, 7, 89
- Multistability in open chemical reaction systems, 5, 359
- Natural products from echinoderms, 1, 1
- — —, polycyclic polysubstituted, systematic development of strategy in, 6, 413
- Neighbouring-group effects and ring conformation, development of Haworth's concepts of, 3, 1
- participation, energetics of, 2, 295
- New perspectives in surface chemistry and catalysis, 6, 373
- Nitrogen fixation, 1, 121
- C-Nitroso-compounds, electrophilic, 6, 1
- Non-bonded interactions of atoms in organic crystals and molecules, 7, 133
- Non-conventional electrophilic aromatic substitutions and related reactions, 3, 167
- Nuclear magnetic resonance and the periodic table, 5, 1
- — — —, carbon-13, in biosynthetic studies, 4, 497
- — — — methods (new) for tracing the future of hydrogen in biosynthesis, 8, 539
- — — — spectral change as a probe of chlorophyll chemistry, 6, 467
- — — — spectroscopy, lanthanide shift reagents in, 2, 49
- — — — —: spin-lattice relaxation, 4, 401
- Nucleic acid, mechanisms of reaction with ultimate chemical carcinogens, 9, 241
- Nucleosides and nucleotides, pyrimidine, 5-substituted, 6, 43
- NYHOLM MEMORIAL LECTURE. Chemical education research: facts, findings, and consequences, 9, 365
- NYHOLM MEMORIAL LECTURE. Forward from Nyholm's Marchon Lecture, 3, 373
- NYHOLM MEMORIAL LECTURE. Growth, change, challenge, 5, 253
- NYHOLM MEMORIAL LECTURE. Ring, cage, and cluster compounds of the main group elements, 8, 315
- Olefin metathesis and its catalysis, 4, 155

Index

- Olefinic compounds, photochemistry of, 3, 329
- On first looking into nature's chemistry:
- I The rôle of small molecules and ions: the transport of the elements 9, 281
 - II The rôle of large molecules, especially proteins, 9, 325
- Organic chemistry of superoxide, 6, 195
- Organoboranes as reagents for organic synthesis, preparation of, 3, 443
- Organoborates in organic synthesis: the use of alkenyl-, alkynyl-, and cyano-borates as synthetic intermediates, 6, 393
- Organometallic chemistry and homogeneous catalysis, the 16 and 18 electron rule in, 1, 337
- Organomethyl compounds, synthesis, structure, and vibrational spectra, 9, 25
- Organosulphur compounds, metal-ion-promoted reactions of, 6, 345
- Organo-transition-metal complexes: stability, reactivity, and orbital correlations, 2, 271
- PEDLER LECTURE. Porphyrins and related ring systems, 4, 1
- Phase boundaries, reactivity of organic molecules at, 1, 229
- Phenols, long-chain, of non-isoprenoid origin, 8, 499
- Philosophy of chemistry, some considerations, 5, 203
- Phosphates, aluminium, the chemistry and binding properties of, 6, 173
- Phosphorus compounds, trivalent, in organic synthesis, 3, 87
- Photochemistry of azobenzene and its derivatives, 1, 481
- of carbonyl compounds, 1, 465
 - of imines, 6, 63
 - of olefinic compounds, 3, 329
 - of organic sulphur compounds, 4, 523
 - of the uranyl ion, 3, 139
 - of transition-metal co-ordination compounds—a survey, 1, 241
- Photodegradation and stabilization of commercial polyolefins, 4, 533
- Photophysics of molecules in micelle-forming surfactant solutions, 7, 453
- Plant growth, control by chemicals, 6, 261
- Polymer solutions, dielectric relaxation in, 1, 49
- supports, insoluble, use in organic chemical synthesis, 3, 65
- Polymerization and copolymerization of butadiene, 6, 235
- Polymers, conductivity and superconductivity in, 5, 95
- Polyolefins, commercial, photogradation and stabilization of, 4, 533
- Porphyrins and related ring systems, 4, 1
- Post-B₁₂ problems in corrin synthesis, 5, 377
- Preparation of organoboranes: reagents for organic synthesis, 3, 443
- PRESIDENTIAL ADDRESS 1976. Chemistry and the new industrial revolution, 5, 317
- Properties and syntheses of sweetening agents, 6, 431
- Prostaglandins, tomorrow's drugs, 4, 589
- , thromboxanes, PGX: biosynthetic products from arachidonic acid, 6, 489
- Prostanoids, total syntheses of, 2, 29
- Protein production by micro-organisms, 8, 143
- Proteins, binding of heavy metals to, 6, 139
- , rôle of in nature's chemistry, 9, 325
- Pulse radiolysis, contributions to chemistry, 7, 235
- Pyrimidine nucleosides and nucleotides, 5-substituted, 6, 43
- Pyro-compounds, inorganic, M_a[(X₂O₇)_b], 5, 269
- Quadruple bonds and other multiple metal to metal bonds, 4, 27
- Quantitative drug design, 3, 273
- Quantum chemistry, computational, growth of from 1950 to 1971, 2, 21
- mechanical tunnelling in chemistry, 1, 211
- Quasielastic laser light scattering, 2, 325
- Radioactive and toxic wastes: a comparison of their control and disposal, 4, 90

- Radiolysis, pulse, contributions to chemistry, 7, 235
- Raman and infrared vibrational spectroscopy in inorganic chemistry, 4, 107
- Reaction mechanisms, four-membered rings and, 5, 149
- —, the conversion of ammonium cyanate into urea, 7, 1
- Reactivity of organic molecules at phase boundaries, 1, 229
- Recent advances in the study of kinetic hydrogen isotope effects, 3, 513
- Recent syntheses in the Vitamin D field, 9, 449
- Research in chemical education: a reassessment, 1, 27
- RESOURCES CONSERVATION BY NOVEL BIOLOGICAL PROCESSES**
- I Grow Fats from Wastes, 8, 283
- II The Use of Microbes in the Petrochemical Industry, 8, 297
- III Utilization of Agricultural and Food Processing Wastes containing Carbohydrates, 8, 309
- Review of chemical education research and development in the U.K., 1972—1976, 7, 317
- Ring, cage, and cluster compounds of the main group elements, 8, 315
- ROBERT ROBINSON LECTURE. Post-B₁₂ problems in corrin synthesis, 5, 377
- ROBERT ROBINSON LECTURE. The logic of working with enzymes, 2, 1
- ROBERT ROBINSON LECTURE. Vitamin B₁₂. Retrospect and prospects, 9, 125
- Rodent control, chemicals in, 1, 381
- Role of chemically-induced dynamic electron polarization (CIDEP) in chemistry, 8, 29
- Rotationally and vibrationally inelastic scattering of molecules, 3, 407
- Safety evaluation of natural and synthetic flavourings, 7, 185
- Scale insects and aphids, chemistry of, 4, 263
- Silicon in organic synthesis, 7, 15
- 16 and 18 Electron rule in organometallic chemistry and homogeneous catalysis, 1, 337
- Small molecules, conformation studies on, 1, 293
- Solids, surface energy of, 1, 445
- Solute-solvent interactions, spectroscopic studies of, 5, 297
- Solution phenomena, the importance of solvent internal pressure and cohesion, 4, 211
- Solutions of metals: solvated electrons, 5, 337
- Solvent internal pressure and cohesion, importance to solution phenomena, 4, 211
- Some considerations on the philosophy of chemistry, 5, 203
- Some recent developments in chemistry teaching in schools, 1, 495
- Spectra of stars, absorption bands in, a crystal field approach, 5, 233
- Spectral lineshapes, collisional transfer of rotational energy with, 7, 219
- Spectroscopic studies of solute-solvent interactions, 5, 297
- Spectroscopy, electron, 1, 355
- , Fourier transform, chemical applications of advances in, 4, 569
- , laser, of ultra-trace quantities, 8, 367
- , rotational and vibrational, comparison with molecular orbital theory in conformational analysis of alcohols and amines, 5, 411
- , threshold electron scattering, 3, 467
- Spin-lattice relaxation: a fourth dimension for proton n.m.r. spectroscopy, 4, 401
- Square-planar complexes, isomerization mechanisms of, 9, 185
- Stability, reactivity, and orbital correlations of organo-transition-metal complexes, 2, 271
- Stereochemical choice in enzymic reactions, 8, 447
- Steroids, routes to by intramolecular Diels-Alder reactions of *o*-xylylenes, 9, 41
- Sterols, biosynthesis of, 1, 259
- Structure of aqueous solutions of hydrophobic solutes, experimental studies on, 2, 203
- Substitution and conformation, effects of, on individual CH bond strengths in simple organic compounds, 7, 399
- Sugars, complex formation with cations, 9, 415

Index

- Sulphoximides 4, 189
Sulphoximides—an update, 9, 477
Sulphur compounds, organic, photochemistry of, 4, 523
—, organic compounds of, metal-ion-promoted reactions of, 6, 345
— species, homonuclear, chemistry of, 2, 233
Superconductivity and conductivity in polymers, 5, 95
Superoxide, organic chemistry of, 6, 195
Surface chemistry and catalysis, new perspectives, 6, 373
— energy of solids, 1, 445
— modified electrodes, 8, 259
— of a liquid, 7, 329
Surfaces, biological, molecular aspects of, 8, 389
—, solid, their acidity, 8, 475
Sweetening agents, properties and syntheses of, 6, 431
Syntheses and properties of sweetening agents, 6, 431
—, recent, in the Vitamin D field, 9, 449
—, total, of prostanoids, 2, 29
Synthesis and synthetic utility of halolactones, 8, 171
—, of corrins, post-B₁₂ problems in, 5, 377
— of polycyclic polysubstituted natural products, systematic development of strategy in, 6, 413
—, organic, enzymes in, 3, 387
—, organic, preparation of organoboranes as reagents for, 3, 443
—, organic, silicon in, 7, 15
—, organic, trivalent phosphorus compounds in, 3, 87
—, organic, use of inorganic polymer supports in, 3, 65
—, organic, the use of organoborates as synthetic intermediates, 6, 393
—, structure, and vibrational spectra of organomethyl compounds, 9, 25
Synthetic pyrethroids, a new group of insecticides, 7, 473
— routes to β -lactams, 5, 181
Systematic development of strategy in the synthesis of polycyclic polysubstituted natural products: the aconite alkaloids, 6, 413
TATE AND LYLE LECTURE. From carbohydrates to enzyme analogues, 8, 85
TATE AND LYLE LECTURE. Spin-lattice relaxation: a fourth dimension for proton n.m.r. spectroscopy, 4, 401
TATE AND LYLE LECTURE. Transition-metal oxide chelates of carbohydrate-directed macromolecules, 8, 221
Teaching of chemistry in schools, some recent developments in, 1, 495
Tervalent phosphorus compounds in organic synthesis, 3, 87
Thermal, photochemical, and transition-metal-mediated routes to steroids by intramolecular Diels-Alder reactions of *o*-xylylenes (*o*-quinodimethanes), 9, 41
Thermodynamics of ion-solvent interactions, 9, 381
Three-dimensional structures and chemical mechanisms of enzymes, 1, 319
Threshold electron scattering spectroscopy, 3, 467
Thromboxanes, prostaglandins, PGX: biosynthetic products of arachidonic acid, 6, 489
TILDEN LECTURE. Applications of e.s.r. spectroscopy to kinetics and mechanism in organic chemistry, 8, 1
TILDEN LECTURE. Concerning stereochemical choice in enzymic reactions, 8, 447
TILDEN LECTURE. Electrophilic C-nitroso-compounds, 6, 1
TILDEN LECTURE. New perspectives in surface chemistry and catalysis, 6, 373
TILDEN LECTURE. The initiation of cyclization using 3-methylcyclohex-2-enone derivatives, 9, 265
TILDEN LECTURE. Valence in transition-metal complexes, 1, 431
Time-correlation functions and molecular motion, 7, 89
Topological subject—chemistry, 2, 457
Transition-metal carbene complexes, chemistry and rôle as reaction intermediates, 2, 99
— complexes, containing infinite chains of metal atoms, metal-metal interactions in, 1, 99

- complexes of synthetic macrocyclic ligands, 4, 421
- complexes, valence in, 1, 431
- co-ordination compounds, photochemistry of, 1, 241
- oxide chelates of carbohydrate-directed macromolecules, 8, 221
- Tunable lasers, 3, 293

- Uranyl ion, photochemistry of, 3, 139
- Use of insoluble polymer supports in organic chemical synthesis, 3, 65
- Utilization of agricultural and food processing wastes containing carbohydrates, 8, 309

- Valence in transition-metal complexes, 1, 431

- Valences, bond, a simple structural model for inorganic chemistry, 7, 359
- Very strong hydrogen bonding, 9, 91
- Vibrational infrared and Raman spectroscopy in inorganic chemistry, 4, 107
- intensities in electronic transitions, 5, 165
- spectra, synthesis, and structure of organomethyl compounds, 9, 25
- Vibrationally and rotationally inelastic scattering of molecules, 3, 407
- Vitamin B₁₂, retrospects and prospects, 9, 125
- 'Vitamin' D, chemistry of: the hormonal calciferols, 6, 83
- Vitamin D, recent syntheses in, 9, 449