

# INDEXES

Volume 16, 1987

The indexes in this issue cover  
Volumes 1—16

(Figures in bold type refer to the volume number)

## INDEX OF AUTHORS

- Aarons, L. J., **5**, 359  
 Ackroyd, J., **11**, 321  
 Ager, D. J., **11**, 493  
 Ahluwalia, J. C., **2**, 203  
 Allen, N. S., **4**, 533, **15**, 373  
 Angyal, S. J., **9**, 415  
 Ambroz, H. B., **8**, 353  
 Atkinson, D., **8**, 475  
 Attygalle, A. B., **13**, 245  
 Baker, A. D., **1**, 355  
 Bamfield, P., **13**, 443  
 Barker, B. E., **9**, 143  
 Barron, L. D., **15**, 261  
 Bartle, K. D., **10**, 113  
 Bartlett, P. D., **5**, 149  
 Baxendale, J. H., **7**, 235  
 Beattie, I. R., **4**, 107  
 Beddell, C. R., **13**, 279  
 Bell, R. P., **3**, 513  
 Belson, D. J., **11**, 41  
 Bender, C. J., **15**, 475  
 Bentley, P. H., **2**, 29  
 Berkoff, C. E., **3**, 273  
 Billington, D. C., **14**, **93**  
 Bird, C. L., **10**, 49  
 Bird, C. W., **3**, 309  
 Blandamer, M. J., **4**, **55**; **14**, 137  
 Blundell, T. L., **6**, 139  
 Boelens, H., **7**, 167  
 Bolton, R., **15**, 261  
 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  
 Bryce-Smith, D., **15**, 93  
 Buchanan, G. L., **3**, 41  
 Burdett, J. K., **3**, 293; **7**, 507  
 Burgess, J., **4**, **55**; **14**, 137  
 Burnett, M. G., **12**, 267  
 Burrows, H. D., **3**, 139  
 Burtles, S. M., **7**, 201  
 Butler, A. R., **16**, 361  
 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  
 Çetinkaya, B., **2**, 99  
 Chamberlain, J., **4**, 569  
 Chandrasekhar, S., **16**, 313  
 Chatt, J., **1**, 121  
 Chesters, J. K., **10**, 270  
 Chisholm, M. H., **14**, **69**  
 Chivers, T., **2**, 233  
 Clark, G. M., **5**, 269  
 Clark, R. J. H., **13**, 219  
 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; **12**, 35  
 Coulson, E. H., **1**, 495  
 Covington, A. K., **14**, 265  
 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  
 Craig, D., **16**, 187  
 Cramer, R. D., **3**, 273  
 Crammer, B., **6**, 431  
 Cross, R. J., **2**, 271; **9**, 185; **14**, 197  
 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 Silva, A. P., **10**, 181  
 de Valois, P. J., **7**, 167  
 Dickinson, E., **14**, 421  
 Dickinson, L. C., **12**, 387  
 Dobson, J. C., **5**, 79  
 Dowle, M. D., **8**, 171  
 Doyle, M. J., **2**, 99  
 Drummond, I., **2**, 233  
 Duffield, J. R., **15**, 291  
 Dunkin, I. R., **9**, 1  
 Durant, G. J., **14**, 375  
 Duxbury, G., **12**, 453  
 Dymond, J. H., **14**, 317  
 Elliott, M., **7**, 473  
 Emsley, J., **9**, 91  
 Engberts, J. B. F. N., **14**, 237  
 Eschenmoser, A., **5**, 377  
 Evans, D. A., **2**, 75  
 Evans, J., **10**, 159  
 Fenby, D. V., **3**, 193  
 Fensham, P. J., **13**, 199  
 Fenton, D. E., **6**, 325; **8**, 199  
 Ferguson, L. N., **4**, 289  
 Fisher, L. R., **6**, 25  
 Fleming, I., **10**, 83  
 Flygare, W. H., **6**, 109  
 Forage, A. J., **8**, 309  
 Fox, M. F., **9**, 143  
 Frazer, M. J., **11**, 171  
 Fry, A., **1**, 163  
 Funk, R. L., **9**, 41  
 Garson, M. J., **8**, 539  
 Georghiou, P. E., **6**, 83  
 Gheorghiu, M. D., **10**, 289  
 Gibson, K. H., **6**, 489  
 Gilbert, J., **10**, 255  
 Gilchrist, T. L., **12**, 53  
 Gillespie, R. J., **8**, 315  
 Glidewell, C., **16**, 361  
 Goodings, E. P., **5**, 95  
 Goodrich, J. A., **14**, 225  
 Gordon, P. F., **13**, 443  
 Gorman, A. A., **10**, 205  
 Gosney, I., **16**, 45  
 Gray, B. F., **5**, 359  
 Gray, H. B., **15**, 17  
 Green, C. L., **2**, 75  
 Greenhill, J. V., **6**, 277  
 Greenwood, N. N., **3**, 231; **13**, 353  
 Grey Morgan, C., **8**, 367  
 Grice, R., **11**, 1  
 Griffiths, J., **1**, 481  
 Grigg, R., **16**, 89  
 Grimshaw, J., **10**, 181  
 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  
Harrison, L. G., **10**, 491  
Hartley, F. R., **2**, 163  
Hartshorn, S. R., **3**, 167  
Hathway, D. E., **9**, 63, 241  
Hayward, R. C., **12**, 285  
Heaven, M. C., **15**, 405  
Heelis, P. F., **11**, 15  
Henderson, J. W., **2**, 397  
Hepler, L. G., **3**, 193  
Hilburn, M. E., **8**, 63  
Hinchliffe, A., **5**, 79  
Hoffman, D. M., **14**, 69  
Holbrook, K. A., **12**, 163  
Holland, H. L., **10**, 435; **11**, 37  
Holm, R. H., **10**, 455  
Hooper, M., **16**, 437  
Hore, P. J., **8**, 29  
Horton, E. W., **4**, 589  
Hough, L., **14**, 357  
Hounsell, E. F., **16**, 161  
Hudson, M. F., **4**, 363  
Huffman, J. C., **14**, 69  
Huntress, W. T., jun., **6**, 295  
Hutchinson, D. W., **6**, 43  
Ibers, J. A., **11**, 57  
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**, 473  
Jencks, W. P., **10**, 345  
Jenkins, J. A., **6**, 139  
Johnson, A. W., **4**, **1**; **9**, 125  
Johnson, S. P., **5**, 441  
Johnstone, A. H., **7**, 317; **9**, 365  
Jones, J. R., **10**, 329  
Jones, P. G., **13**, 157  
Joslin, C. G., **8**, 29  
Jotham, R. W., **2**, 457  
Kalyanasundaram, K., **7**, 453  
Katritzky, A. R., **13**, 47  
Keenan, A. G., **8**, 259  
Kemball, C., **13**, 375  
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  
Korpela, T., **12**, 309  
Kresge, A. J., **2**, 475  
Krishnaji, **7**, 219  
Kroto, H. W., **11**, 435  
Krüger, H., **11**, 227  
Kuhn, A. T., **10**, 49  
Lappert, M. F., **2**, 99  
Lee, M. L., **10**, 113  
Lee-Ruff, E., **6**, 195  
Legon, A. C., **16**, 467  
Leigh, G. J., **1**, 121; **4**, 155  
Lemieux, R. U., **7**, 423  
Leznoff, C. C., **3**, 65  
Lindberg, B., **10**, 409  
Lindley, J., **16**, 275  
Lindsay, D. G., **10**, 233  
Lindoy, L. F., **4**, 421  
Linford, R. G., **1**, 445  
Lipscomb, W. N., **1**, 319  
Liu, M. T. H., **11**, 127  
Lloyd, D., **16**, 45  
Lorimer, J. P., **16**, 239  
Lynch, J. M., **3**, 309  
Lythgoe, B., **9**, 449  
Mäkelä, M. J., **12**, 309  
McCleverty, J. A., **12**, 331  
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  
Maitlis, P. M., **10**, 1  
Mann, B. E., **15**, 167  
Mann, J., **16**, 381  
Manning, P. G., **5**, 233  
Maret, A. R., **2**, 325  
Markov, P., **13**, 69  
Maslowsky, E., **9**, 25  
Mason, R., **1**, 431  
Mason, T. J., **16**, 239, 275  
Mayo, B. C., **2**, 49  
Meadowcroft, A. E., **4**, 99  
Menger, H. W., **2**, 415  
Meyer, A. Y., **15**, 449  
Mightley, D., **4**, 549  
Millen, D. J., **5**, 253; **16**, 467  
Mills, R., **5**, 215  
Mingos, D. M. P., **15**, 31  
Mitchell, J. C., **14**, 399  
Moore, D. S., **12**, 415  
Moore, H. W., **2**, 415; **10**, 289  
Morgan, E. D., **13**, 245  
Morley, R., **5**, 269  
Morris, D. G., **11**, 397  
Morris, J. H., **6**, 173  
Morris, J. L., **15**, 1  
Müller, J., **16**, 75  
Muetterties, E. L., **11**, 283  
Mulheirn, L. F., **1**, 259  
Munn, A., **4**, 87  
Murphy, W. S., **12**, 213  
Musumarra, G., **13**, 47  
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  
O'Donnell, T. A., **16**, 1  
Ormiston, R. A., **16**, 45  
Overton, K. H., **8**, 447  
Page, M. I., **2**, 295  
Paleos, C. M., **14**, 45  
Paulsen, H., **13**, 15  
Pelter, A., **11**, 191  
Perkins, P. G., **6**, 173  
Pickford, C. J., **10**, 245  
Pindur, U., **16**, 75  
Pletcher, D., **4**, 471  
Poliakoff, M., **3**, 293; **7**, 527  
Prakash, V., **7**, 219

## Index

- Pratt, A. C., **6**, 63  
Pratt, J. M., **14**, 161  
Puddephatt, R. J., **12**, 99  
Ramm, P. J., **1**, 259  
Ramsay, J. D. F., **15**, 335  
Rao, C. N. R., **5**, 297; **12**, 361  
Ratledge, C., **8**, 283  
Rattee, I. D., **1**, 145  
Redl, G., **3**, 273  
Redpath, J., **12**, 75  
Rees, C. W., **15**, 1  
Richards, D. H., **6**, 235  
Ritch, J. B., jun., **5**, 452  
Roberts, M. W., **6**, 373  
Robinson, F. A., **5**, 317  
Robinson, S. D., **12**, 415  
Roche, M., **5**, 165  
Rodgers, M. A. J., **7**, 235  
Roesky, H. W., **15**, 309  
Rose, A. E. A., **6**, 173  
Rouvray, D. H., **3**, 355  
Rowlinson, J. S., **7**, 329; **12**, 251  
Sanders, J. K. M., **6**, 467  
Sarma, T. S., **2**, 203  
Satchell, D. P. N., **4**, 231; **6**, 345  
Satchell, R. S., **4**, 231  
Scheinmann, F., **11**, 321  
Schlegel, W., **7**, 177  
Scriven, E. F. V., **12**, 129  
Self, R., **10**, 255  
Senthilnathan, V. P., **5**, 297  
Sermon, P. A., **16**, 339  
Sherman, L. R., **14**, 225  
Sherwood, P. M. A., **14**, 1  
Shorter, J., **7**, 1  
Simonetta, M., **13**, 1  
Simpson, T. J., **4**, 497; **16**, 123  
Singh, S., **5**, 297  
Slorach, S. A., **10**, 280  
Smith, E. B., **2**, 181, **15**, 503  
Smith, I. W. M., **14**, 141  
Smith, J. A. S., **15**, 225  
Smith, K., **3**, 443  
Smith, K. M., **4**, 363  
Smith, W. E., **6**, 173; **9**, 217  
Snell, K. D., **8**, 259  
Somorjai, G. A., **13**, 321  
Spiro, M., **15**, 141  
Stacey, M., **2**, 145  
Staunton, J., **8**, 539  
Staveley, L. A. K., **13**, 173  
Stevens, M. F. G., **7**, 377  
Stoddart, J. Fraser, **8**, 85  
Stokes, R. H., **11**, 257  
Strachan, A. N., **11**, 41  
Suckling, C. J., **3**, 387; **13**, 97  
Suckling, K. E., **3**, 387  
Sutherland, I. O., **15**, 63  
Sutherland, J. K., **9**, 265  
Sutherland, R. G., **1**, 241  
Sutton, D., **4**, 443  
Swan, J. S., **7**, 201  
Swindells, R., **7**, 212  
Sykes, A. G., **14**, 283  
Symons, M. C. R., **5**, 337; **12**, 1, 387; **13**, 393  
Takken, H. J., **7**, 167  
Taylor, J. B., **4**, 189; **9**, 477  
Taylor, S. E., **10**, 329  
Thea, S., **15**, 125  
Theobald, D. W., **5**, 203  
Thomas, T. W., **1**, 99  
Thompson, M., **1**, 355  
Thorner, C. W., **8**, 563  
Tincknell, R. C., **5**, 463  
Toennies, J. P., **3**, 407  
Tolman, C. A., **1**, 337  
Trost, B. M., **11**, 141  
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  
Varvoglis, A., **10**, 377  
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  
Ward, R. S., **11**, 75  
Watkins, D. M., **9**, 429  
Wattanasin, S., **12**, 213  
White, A. J., **3**, 17  
Whitfield, R. C., **1**, 27  
Widom, B., **14**, 121  
Wieser, H., **5**, 411  
Wiesner, K., **6**, 413  
Williams, A., **15**, 125  
Williams, D. H., **13**, 131  
Williams, D. L. H., **14**, 171  
Williams, D. R., **15**, 291  
Williams, G., **7**, 89  
Williams, G. H., **15**, 261  
Williams, R. J. P., **9**, 281, 325  
Wilson, A. D., **7**, 265  
Wise, S. A., **10**, 113  
Witzel, H., **16**, 75  
Yoffe, A. D., **5**, 51  
Zeelen, F. J., **12**, 75

## INDEX OF TITLES

- Abiotic receptors, 12, 285
- 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
- Activation parameters for chemical reactions in solution, 14, 237
- Acylation and alkylation catalysts, 4-dialkylaminopyridines, super-, 12, 129
- 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
- Aliphatic nucleophilic substitution reactions, new insights into, from the use of pyridines as leaving groups, 13, 47
- Alkali-metal complexes in aqueous solution, 4, 549
- Alkaloids, aconite, synthesis of, 6, 413
- Alkenes, the Friedel-Crafts acylation of, 1, 73
- $\pi$ -Allylnickel halides as selective reagents in organic synthesis, 14, 93
- Aluminium phosphates, the chemistry and binding properties of, 6, 173
- Amines and alcohols, conformational analysis of, 5, 411
- Analysis of trace constituents of the diet, organic and inorganic, 10, 245, 255
- Analytical methods, modern, for environmental polycyclic aromatic compounds, 10, 113
- Angular geometries of hydrogen-bonded dimers: a simple electrostatic interpretation of the success of the electron pair model, 16, 467
- Anionic cyclization of phenols, 12, 213
- Ants, chemicals from the glands of, 13, 245
- 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
- Applications of multinuclear NMR to structural and biosynthetic studies of polyketide microbial metabolites, 16, 123
- Application of research findings to the development of commercial flavourings, 7, 177
- Aqueous carbonate solutions, potentiometric titrations of, 14, 265
- Aqueous mixtures, kinetics of reactions in, 4, 55
- Aqueous solution, micelles in, 6, 25
- Arsonium ylides (with some mention also of arsinimines, stibonium and bismuthonium ylides), 16, 45
- Arylation, homolytic, of aromatic and polyfluoroaromatic compounds, 15, 261
- Aryl cations—new light on old intermediates, 8, 353
- halides, photochemistry and photocyclization of, 10, 181
- Aryldiazonium cations, co-ordination chemistry of, 4, 443
- Aryliodine(III) dicarboxylates, 10, 377
- 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
- $B_{12}$ -Dependent isomerase enzymes: how the protein controls the active site, 14, 161
- Benzene compounds, substituted, synthesis from acyclic compounds, 13, 441
- Bile pigments, 4, 363
- Binding of heavy metals to proteins, 6, 139
- Binding properties and chemistry of aluminium phosphates, 6, 173
- Bio-active molecules, structural studies on, 13, 131
- Biological surfaces, molecular aspects of, 8, 389
- Biomimetic chemistry, 1, 553
- Biosynthesis of sterols, 1, 259

## Index

- Biosynthetic products from arachidonic acid, 6, 489  
—, studies, carbon-13 nuclear magnetic resonance in, 4, 497  
— of polyketide microbial metabolites, applications of multinuclear NMR to structural and, 16, 123
- Bis(diphenylphosphino)methane, chemistry of, 12, 99
- Blood groups, human, and carbohydrate chemistry, 7, 423
- Bonding in molecular clusters and their relationship to bulk metals, 15, 31
- Bond strengths, CH, in simple organic compounds: effects of conformation and substitution, 7, 399  
— valences—a simple structural model for inorganic chemistry, 7, 359
- Boron reagents, carbon-carbon bond formation involving, 11, 191
- Bredt's rule, 3, 41
- Brønsted relation—recent developments, 2, 475
- Brownian dynamics with hydrodynamic interactions: the application to protein diffusional problems, 14, 421
- 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 differentiation antigens, structural and conformational characterization of, 16, 161
- 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-carbon bond formation involving boron reagents, 11, 191
- Carbon-13 nuclear magnetic resonance in biosynthetic studies, 4, 497
- Carbonium ions, carbanions, and radicals, chirality in, 2, 397
- Carbonyl clusters, metal, relationship with supported metal catalysts, 10, 159  
— compounds, photochemistry of, 1, 465  
— equivalents, silicon-containing, 11, 493  
— group transpositions, 11, 397
- Carcinogens, chemical, mechanisms of reaction with nucleic acid, 9, 241
- Catalysis and coordination compounds involving electron-rich main group elements, 15, 309
- 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
- Catalysts, supported metal, relationship with metal carbonyl clusters, 10, 159
- Cationic species in protonic superacids and acidic melts, stabilization of unusual, 16, 1
- CENTENARY LECTURE. Biomimetic chemistry, 1, 553
- CENTENARY LECTURE. Catalysis and coordination compounds involving electron-rich main group elements, 15, 309
- CENTENARY LECTURE. Cyclopentanoids: a challenge for new methodology 11, 141
- CENTENARY LECTURE. Hydrocarbon reactions at metal centres, 11, 283
- CENTENARY LECTURE. Light scattering in pure liquids and solutions, 6, 109
- CENTENARY LECTURE. Long-range electron-transfer in blue copper proteins, 15, 17
- CENTENARY LECTURE. Metal Clusters in biology, 10, 455
- CENTENARY LECTURE. Molecular Ingredients of heterogeneous catalysis, 13, 321
- CENTENARY LECTURE. Organic reaction paths: a theoretical approach, 13, 1
- CENTENARY LECTURE. Phase equilibrium and interfacial structure, 14, 121
- CENTENARY LECTURE. Quadruple bonds and other multiple metal to metal bonds, 4, 27

- CENTENARY LECTURE. Reactivities of carbon disulphide, carbon dioxide, and carbonyl sulphide towards some transition-metal systems, 11, 57
- 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
- Charge-transfer complexes, theoretical models of, 15, 475
- 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
- Chemical education, conceptions, misconceptions, and alternative frameworks in, 13, 199
- research: facts, findings, and consequences, 9, 365
- interpretations of molecular wavefunctions, 5, 79
- models of enzymic transimination, 12, 309
- processes on heterogeneous catalysis, 13, 375
- Chemically-induced dynamic electron polarization (CIDEP), role in chemistry, 8, 29
- Chemicals from the glands of ants, 13, 245
- 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 peroxonium ions and dioxygen ylides, 14, 399
- 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
- Chirality, symmetry, and molecular, 15, 189
- 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

## Index

- 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  
—, 1-D metallic, 9, 429
- Complexes, 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 aryl-diazonium cations: aryl-diazenato (arylozo) complexes of transition metals, and the aryl-diazenato-nitrosyl analogy, 4, 443
- Corrin synthesis, post-B<sub>12</sub> problems in, 5, 377
- Crystal field approach to absorption bands in the spectra of stars, 5, 233
- Crystal structure determination: a critical view, 13, 157
- Crystals and molecules, organic, non-bonded interactions of atoms in, 7, 133
- Current aspects of unimolecular reactions, 12, 163
- Cyanocobalt(III) complexes, the synthesis of mononuclear, 12, 267
- Cyanoketenes: synthesis and cyclo-additions, 10, 289
- Cyclization, initiation of, using 3-methylcyclohex-2-enone derivatives, 9, 265  
— of phenols, anionic, 12, 213
- Cyclopentanoids: a challenge for new methodology, 11, 141
- Cyclopolymerization, 1, 523
- Dental cements, chemistry of, 7, 265
- Designing drugs to fit a macromolecular receptor, 13, 279
- Development of flavour in potable spirits, 7, 201
- 4-Dialkylaminopyridines: super acylation and alkylation catalysts, 12, 129
- Diazirines, the thermolysis and photolysis of, 11, 127
- $\beta$ -Dicarbonyl compounds, light-induced tautomerism of, 13, 69
- Dielectric relaxation in polymer solutions, 1, 49
- Diels-Alder reaction, stereochemical aspects of the intramolecular, 16, 187
- Diffusion in liquids, the effect of isotopic substitution on, 5, 215
- Diffusional problems, Brownian dynamics with hydrodynamic interactions: the application to protein, 14, 421
- 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
- 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
- Electrode and related structures, photoelectron spectroscopic structures of, 14, 1



- Electron as a chemical entity, 4, 323  
 — pair model, angular geometries of hydrogen-bonded dimers: a simple electrostatic interpretation of the success of the, 16, 467  
 — scattering spectroscopy, threshold, 3, 467  
 — spectroscopy, 1, 355  
 Electronic absorption bands, overlapping, computer resolution of, 9, 143  
 Electronic properties of some chain and layer compounds, 5, 51  
 — transitions, vibrational intensities in, 5, 165  
 Electrons, solvated, in solutions of metals, 5, 337  
 Electron spin resonance of haemoglobin and myoglobin, 12, 387  
 Electron-transfer, long range, in blue copper proteins, 15, 17  
 Electrophilic aromatic substitutions, non-conventional, and related reactions, 3, 167  
 — C-nitroso-compounds, 6, 1  
 Electrophoresis, historical development of sodium dodecyl sulphate-polyacrylamide gel, 14, 225  
 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 chemical influences on behaviour and mentation, 15, 93  
 — lead in perspective, 8, 63  
 — polycyclic aromatic compounds, modern analytical methods for, 10, 113  
 — 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  
 Enzyme-catalysed reactions, reactive intermediates in, 13, 97  
 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  
 FARADAY LECTURE. The molecular theory of small systems, 12, 251  
 Fast reactions, techniques for the kinetic study of, 11, 227  
 Fats grown from wastes, 8, 283  
 Fe(CO)<sub>4</sub>, 7, 527  
 5-Substituted pyrimidine nucleosides and nucleotides, 6, 43  
 Fixation, of nitrogen, 1, 121  
 Flavins (isoalloxazines), the photo-physical and photochemical properties of, 11, 15  
 Fluorine, modern methods for introduction into organic molecules: an approach to compounds with altered chemical and biological activities, 16, 381  
 Fluorescence decay dynamics of the halogens and interhalogens, 15, 405  
 Fluxionality of polyene and polyenyl metal complexes, 15, 167  
 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 micro-organisms, 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 hydride reducing agents, 5, 23  
 Gas-phase kinetics of the difluoro-amino-radical, 3, 17  
 Gases, and droplets, interactions in the atmosphere of, 1, 411

## Index

- Glass transition: salient facts and theoretical models, 12, 361
- Glycoproteins, proteoglycans, and carbohydrate-protein complexes of human tissues, chemical aspects of, 2, 355
- Glycoproteins, synthesis of complex oligosaccharide chains of, 13, 15
- Gold drugs used in the treatment of rheumatoid arthritis, chemistry of, 9, 217
- Growth of computational quantum chemistry from 1950 to 1971, 2, 21
- Guanidine derivatives acting at histaminergic receptors 14, 375
- Haemoglobin and myoglobin, electron spin resonance of, 12, 387
- Halogens and interhalogens, fluorescence decay dynamics of, 15, 405
- Handling toxic chemicals—environmental considerations, 4, 77
- Hard-sphere theories of transport properties, 14, 317
- 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. The sweeter side of chemistry, 14, 357
- HAWORTH MEMORIAL LECTURE. Human blood groups and carbohydrate chemistry, 7, 423
- HAWORTH MEMORIAL LECTURE. Structural studies of polysaccharides, 10, 409
- HAWORTH MEMORIAL LECTURE. Synthesis of complex oligosaccharide chains of glycoproteins, 13, 15
- Hazards in the chemical industry—risk management and insurance, 8, 419
- Health hazards to workers from industrial chemicals, 4, 82
- Heterocyclic compounds, prototropic routes to 1,3- and 1,5-dipoles, and ylides for the synthesis of, 16, 89
- Heterogeneous catalysis, chemical processes on, 13, 375
- High resolution laser spectroscopy, 12, 453
- Histaminergic receptors, guanidine derivatives acting at, 14, 375
- Historical development of sodium dodecyl sulphate-polyacrylamide gel electrophoresis, 14, 225
- Homogeneous catalysis, and organo-metallic chemistry, the 16 and 18 electron rule in, 1, 337
- Homogeneous chemical reactions, application of electrochemical techniques to the study of, 4, 471
- Homolytic arylation of aromatic and polyfluoroaromatic compounds, 15, 261
- Human blood groups and carbohydrate chemistry, 7, 423
- Hydrocarbon formation by microorganisms, 3, 309
- reactions at metal centres, 11, 283
- Hydrogen bond and charge-transfer complexes, calorimetric investigations of, 3, 193
- bonded liquids, thermodynamics of, 11, 257
- 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
- Infrared and Raman vibrational spectroscopy in inorganic chemistry, 4, 107
- INGOLD LECTURE. Four-membered rings and reaction mechanisms, 5, 149
- INGOLD LECTURE. How does a reaction choose its mechanism? 10, 345
- 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  $M_a[(X_2O_7)_b]$ , 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
- Isocyanic acid, preparation and properties of, 11, 41
- 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 hydrogen exchange in purines: mechanisms and applications, 10, 329
- substitution effects on diffusion in liquids, 5, 215
- JOHN JEYES LECTURE. Chemicals which control plant growth, 6, 261
- JOHN JEYES LECTURE. Environmental chemical influences on behaviour and mentation, 15, 93
- JOHN JEYES LECTURE. The environmental chemistry of radioactive waste disposal, 15, 291
- 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
- $\beta$ -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
- LENNARD-JONES LECTURE. Recent experimental and theoretical work on molecularly simple liquid mixtures, 13, 173
- Leukotrienes; a new class of biologically active compounds including SRS-A, the synthesis of, 11, 321
- Ligand substitution reactions of square-planar molecules, 14, 197
- Ligands, *cis*- and *trans*-effects of, 2, 163
- , compartmental: routes to homo- and hetero-dinuclear complexes, 8, 199
- Light-induced tautomerism of  $\beta$ -dicarbonyl compounds, 13, 69
- Lignans and neolignans, the synthesis of, 11, 75
- Liquid mixtures, recent experimental and theoretical work on molecularly simple, 13, 173
- Liquid, surface of a, 7, 329
- LIVERSIDGE LECTURE. On first looking

- into nature's chemistry:  
 I The role of small molecules and ions: the transport of elements, 9, 281  
 II The role 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
- Macromolecular receptor, designing drugs to fit a, 13, 279
- Main-group elements, ring, cage, and cluster compounds of, 8, 315
- Matrix isolation technique and its application to organic chemistry, 9, 1
- Measurement of effective charge in an organic reaction in solution, 15, 125
- Mechanisms, chemical, and three-dimensional structures of enzymes, 1, 319  
 —, isomerization, of square-planar complexes, 9, 185  
 — of the microbial hydroxylation of steroids, 11, 371  
 — of reaction between ultimate chemical carcinogens and nucleic acid, 9, 241
- Medicinal chemistry of anti-leprosy drugs, 16, 437
- 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
- MELDOLA MEDAL LECTURE. The relationship between metal carbonyl clusters and supported metal catalysts, 10, 159
- Meldrum's acid, 7, 345
- Metal carbonyl clusters, relationship with supported metal catalysts, 10, 159  
 — centres, hydrocarbon reactions at, 11, 283  
 — clusters in biology, 10, 455
- Metal-metal bonding and metalloboranes, 3, 231  
 — bonds of various orders, synergic interplay of experiment and theory in studying, 12, 35
- Metal-ion-promoted reactions of organo-sulphur compounds, 6, 345
- 1-D Metallic complexes, 9, 429
- Metalloboranes and metal-metal bonding, 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
- Methyl group removal in steroid biosynthesis, 10, 435
- 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
- Mixed-valence complexes, the chemistry and spectroscopy of, 13, 219
- Modern methods for the introduction of fluorine into organic molecules: an approach to compounds with altered chemical and biological activities, 16, 381
- Molecular aspects of biological surfaces, 8, 389  
 — beam reactive scattering, 11, 1  
 — collisions and the semiclassical approximation, 5, 125  
 — orbital theory, comparison with rotational and vibrational spectroscopy in conformational analysis of alcohols and amines 5, 411  
 — recognition by synthetic receptors, 15, 63  
 — shapes, 7, 507  
 — tectonics, the construction of polyhedral clusters, 13, 353

- structure and organoleptic quality, 7, 167
- theory of small systems, 12, 251
- wavefunctions, chemical interpretations of, 5, 79
- Molecules, the size of, 15, 449
- Molybdenum and tungsten; alkoxy, amido, hydrazido, and related compounds of, 12, 331
- Monoalkyltriazenes, 7, 377
- Morphogenesis, biological, the physical chemistry of, 10, 491
- Motion, molecular, and time-correlation functions, 7, 89
- Multistability in open chemical reaction systems, 5, 359
- Myoglobin and haemoglobin, electron spin resonance of, 12, 387
- 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
- Neutron scattering techniques, small angle, recent developments in the characterization of oxide sols, 15, 335
- New insights into aliphatic nucleophilic substitution reactions from the use of pyridines as leaving groups, 13, 47
- New perspectives in surface chemistry and catalysis, 6, 373
- Nitrogen fixation, 1, 121
- S*-Nitrosation and the reactions of *S*-nitroso compounds, 14, 171
- Nitroso-alkenes and nitroso-alkynes, 12, 53
- C*-Nitroso-compounds, electrophilic, 6, 1
- N.m.r. and vibrational spectroscopic studies, structure in solvents and solutions, 12, 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
- quadrupole interactions in solids, 15, 225
- Nucleic acid, mechanisms of reaction with ultimate chemical carcinogens, 9, 241
- Nucleosides and nucleotides, pyrimidine, 5-substituted, 6, 43
- Nutritional chemistry of inorganic trace constituents of the diet, 10, 270
- NYHOLM MEMORIAL LECTURE. Chemical education research: facts, findings, and consequences, 9, 365
- NYHOLM MEMORIAL LECTURE. Conceptions, misconceptions, and alternative frameworks in chemical education, 13, 199
- NYHOLM MEMORIAL LECTURE. Forward from Nyholm's March On 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
- NYHOLM MEMORIAL LECTURE. Solving chemical problems, 11, 171
- NYHOLM MEMORIAL LECTURE. Synergic interplay of experiment and theory in studying metal-metal bonds of various orders, 12, 35
- Olefin metathesis and its catalysis, 4, 155
- Olefinic compounds, photochemistry of, 3, 329
- On first looking into nature's chemistry: I The role of small molecules and ions: the transport of the elements, 9, 281
- II The role of large molecules,

## Index

- especially proteins, 9, 325  
Organic chemistry of superoxide, 6, 195  
Organic reaction paths: a theoretical approach, 13, 1  
Organoboranes as reagents for organic synthesis, preparation of, 3, 443  
Organoborates in organic synthesis: the use of alkenyl-, alkynyl-, and cyanoborates 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  
Orthoesters and dialkoxycarbenium ions: reactivity, stability, structure, and new synthetic applications, 16, 75  
Oxygen, singlet molecular, 10, 205  
PEDLER LECTURE. Organic poly-(sulphur-nitrogen) chemistry, 15, 1  
PEDLER LECTURE. Porphyrins and related ring systems, 4, 1  
Peroxonium ions and dioxygen ylides, the chemistry of, 14, 399  
Phase boundaries, reactivity of organic molecules at, 1, 229  
Phase equilibrium and interfacial structure, 14, 121  
Phenols, anionic cyclization of, 12, 213  
—, 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  
Photocyclization and photochemistry of aryl halides, 10, 181  
Photodegradation and stabilization of commercial polyolefins, 4, 533  
Photoelectron spectroscopic studies of electrode and related structures, 14, 1  
Photophysical and photochemical properties of flavins (isoalloxazines), 11, 15  
Photophysics of molecules in micelle-forming surfactant solutions, 7, 453  
Plant growth, control by chemicals, 6, 261  
Plastocyanin, structure and electron-transfer reactivity of the blue copper protein, 14, 283  
Platinum metal complexes,  $\eta^5$ -cyclopentadienyl and  $\eta^6$ -arene as protecting ligands towards, 10, 1  
Polyelectrodes: the behaviour and applications of mixed redox systems, 15, 141  
Polyhedral clusters, the construction of, 13, 353  
Polymer solutions, dielectric relaxation in, 1, 49  
— supports, insoluble, use in organic chemical synthesis, 3, 65  
Polymerization and copolymerization of butadiene, 6, 235  
Polymerization in organized systems, 14, 45  
Polymers, conductivity and superconductivity in, 5, 95  
Polymers, recent advances in the photo-oxidation and stabilization of, 15, 373  
Polyolefins, commercial, photodegradation and stabilization of, 4, 533  
Polysaccharides, structural studies of, 10, 409  
Poly(sulphur-nitrogen) chemistry, organic, 15, 1  
Porphyrins and related ring systems, 4, 1  
Post-B<sub>12</sub> problems in corrin synthesis, 5, 377  
Potentiometric titrations of aqueous carbonate solutions, 14, 265  
Preparation of organoboranes: reagents

- for organic synthesis, 3, 443  
 — and properties of isocyanic acid, 11, 41
- PRESIDENTIAL ADDRESS 1976. Chemistry and the new industrial revolution, 5, 317
- PRIESTLEY LECTURE. 'On the science of deep-sea diving—observations on the respiration of different kinds of air', 15, 503
- Product stability in kinetically-controlled organic reactions, 16, 313
- 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
- Protecting ligands,  $\eta^5$ -cyclopentadienyl and  $\eta^6$ -arene towards platinum metal complexes, 10, 1
- Protein production by micro-organisms, 8, 143
- Proteins, binding of heavy metals to, 6, 139
- Proteins, role of in nature's chemistry, 9, 325
- Prototropic routes to 1,3- and 1,5-dipoles, and 1,2-ylides: applications to the synthesis of heterocyclic compounds, 16, 89
- Pulse radiolysis, contributions to chemistry, 7, 235
- Purines, isotopic hydrogen exchange in, mechanisms and applications, 10, 329
- Pyridines as leaving groups, new insights into aliphatic nucleophilic substitution from the use of, 13, 47
- Pyrimidine nucleosides and nucleotides, 5-substituted, 6, 43
- Pyro-compounds, inorganic,  $M_n[(X_2O)_n]$ , 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
- Radical cations in condensed phases, 13, 393
- Radioactive and toxic wastes: a comparison of their control and disposal, 4, 90
- Radioactive waste disposal, the environmental chemistry of, 15, 291
- Radiolysis, pulse, contributions to chemistry, 7, 235
- Raman and infrared vibrational spectroscopy in inorganic chemistry, 4, 107
- R. A. ROBINSON MEMORIAL LECTURE. Potentiometric titrations of aqueous carbonate solutions, 14, 265
- R. A. ROBINSON MEMORIAL LECTURE. Thermodynamics of hydrogen-bonded liquids, 11, 257
- Reaction mechanisms, four-membered rings and, 5, 149  
 —, the conversion of ammonium cyanate into urea, 7, 1
- Reactions involving the triple bond in dimolybdenum and ditungsten hexa-alkoxides and C-C, C-N, C-O triple bonds, 14, 69
- Reactive intermediates in enzyme-catalysed reactions, 13, 97
- Reactivities of carbon disulphide, carbon dioxide, and carbonyl sulphide towards some transition-metal systems, 11, 57
- Reactivity of organic molecules at phase boundaries, 1, 229
- Recent advances in the photo-oxidation and stabilization of polymers, 15, 373
- Recent advances in the study of kinetic hydrogen isotope effects, 3, 513
- Recent chemical studies of sodium nitroprusside relevant to its hypotensive action, 16, 361
- Recent developments in the characterization of oxide sols using small angle neutron scattering techniques, 15, 335
- Recent syntheses in the Vitamin D field, 9, 449
- Redox systems, polyelectrodes: the behaviour and applications of mixed, 15, 141
- Research in chemical education: a reassessment, 1, 27
- Resonant descriptions of bonding and

- reactivity of group VIII-IB metals in the solid state, 16, 339  
**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-B<sub>12</sub> problems in corrin synthesis, 5, 377  
**ROBERT ROBINSON LECTURE.** The logic of working with enzymes, 2, 1  
**ROBERT ROBINSON LECTURE.** Vitamin B<sub>12</sub>. 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  
 Semistable molecules in the laboratory and in space, 11, 435  
 Silicon compounds in organic synthesis, some uses of, 10, 83  
 — containing carbonyl equivalents, 11, 493  
 — in organic synthesis, 7, 15  
 16 and 18 Electron rule in organometallic chemistry and homogeneous catalysis, 1, 337  
 Size of molecules, 15, 449  
 Small molecules, conformation studies on, 1, 293  
 Sodium nitroprusside, recent chemical studies of, relevant to its hypotensive action, 16, 361  
 Solids, surface energy of, 1, 445  
 Sols, oxide, recent developments in the characterization of, using small angle neutron scattering techniques, 15, 335  
 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  
 Solving chemical problems, 11, 171  
 Some considerations on the philosophy of chemistry, 5, 203  
 Some recent developments in chemistry teaching in schools, 1, 495  
 Sonochemistry: Part 1—the physical aspects, 16, 239  
 Sonochemistry: Part 2—the synthetic applications, 16, 275  
 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 and chemistry of mixed-valence complexes, 13, 219  
 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  
 Square-planar molecules, ligand substitution reactions of, 14, 197  
 SRS-A, the synthesis of leukotrienes: a new class of biologically active compounds including, 11, 321  
 Stability, reactivity, and orbital correlations of organo-transition-metal complexes, 2, 271



- Stabilization of unusual cationic species in protonic superacids and acidic melts, 16, 1
- Stereochemical aspects of the intramolecular Diels–Alder reaction, 16, 187
- Stereochemical choice in enzymic reactions, 8, 447
- Stereoselective synthesis of steroid side-chains, 12, 75
- Steroid biosynthesis, methyl group removal in, 10, 435
- , the mechanism of the microbial hydroxylation of, 11, 371
- , routes to by intramolecular Diels–Alder reactions of *o*-xylylenes, 9, 41
- side-chains, stereoselective synthesis of, 12, 75
- Sterols, biosynthesis of, 1, 259
- Structure and electron-transfer reactivity of the blue copper protein plastocyanin, 14, 283
- Structure in solvents and solutions—
- N.m.r. and vibrational spectroscopic studies, 12, 1
- 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
- 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
- Sweeter side of chemistry, 14, 357
- Symmetry and molecular chirality, 15, 189
- Syntheses and properties of sweetening agents, 6, 431
- of mononuclear cyanocobalt(III) complexes, 12, 267
- , recent, in the Vitamin D field, 9, 449
- , total, of prostanoids, 2, 29
- Synthesis and cycloadditions, cyanoketenes, 10, 289
- and synthetic utility of halolactones, 8, 171
- , of corrins, post-B<sub>12</sub> problems in, 5, 377
- of complex oligosaccharide chains of glycoproteins, 13, 15
- , of heterocyclic compounds, applications of prototropic routes to 1,3- and 1,5-dipoles, and 1,2-ylides, 16, 89
- of leukotrienes: a new class of biologically active compounds including SRS-A, 11, 321
- of lignans and neolignans, 11, 75
- 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, some uses of silicon compounds, 10, 83
- , 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
- of substituted benzene compounds from acyclic precursors, 13, 441
- Synthetic pyrethroids. A new group of insecticides, 7, 473
- routes to  $\beta$ -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 carbo-

- hydrates 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. Structural and conformational characterization of carbohydrate differentiation antigens, 16, 161
- 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
- Techniques for the kinetic study of fast reactions in solution, 11, 227
- Tervalent phosphorus compounds in organic synthesis, 3, 87
- Theoretical models of charge-transfer complexes, 15, 475
- 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
- Thermolysis and photolysis of diazirines, 11, 127
- 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. Alkoxy, amido, hydrazido, and related compounds of molybdenum and tungsten, 12, 331
- TILDEN LECTURE. Applications of e.s.r. spectroscopy to kinetics and mechanism in organic chemistry, 8, 1
- TILDEN LECTURE. Carbon-carbon bond formation involving boron reagents, 11, 191
- TILDEN LECTURE. Chemistry and spectroscopy of mixed-complexes, 13, 219
- TILDEN LECTURE. Concerning stereochemical choice in enzymic reactions, 8, 447
- TILDEN LECTURE.  $\eta^5$ -Cyclopentadienyl and  $\eta^6$ -arene as protecting ligands towards platinum metal complexes 10, 1
- TILDEN LECTURE. Electrophilic C-nitroso-compounds, 6, 1
- TILDEN LECTURE. Initiation of cyclization using 3-methylcyclohex-2-enone derivatives, 9, 265
- TILDEN LECTURE. Molecular beam reactive scattering, 11, 1
- TILDEN LECTURE. Molecular recognition by synthetic receptors, 15, 63
- TILDEN LECTURE. New perspectives in surface chemistry and catalysis, 6, 373
- TILDEN LECTURE. Semistable molecules in the laboratory and in space, 11, 435
- TILDEN LECTURE. Some uses of silicon compounds in organic synthesis, 10, 83
- TILDEN LECTURE. Structural studies on bio-active molecules, 13, 131
- TILDEN LECTURE. Structure and electron-transfer reactivity of the blue copper protein plastocyanin, 14, 283
- TILDEN LECTURE. The collision dynamics of vibrationally excited molecules, 14, 141
- TILDEN LECTURE. Valence in transition-metal complexes, 1, 431
- Time-correlation functions and molecular motion, 7, 89
- Topological subject—chemistry, 2, 457
- Trace constituents of the diet, chemical aspects, 10, 233
- organic constituents of the diet, sources and biogenesis, 10, 280
- Transimination, chemical models of enzymic, 12, 309
- 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
- hydride complexes, 12, 415
- systems, reactivities of carbon disulphide, carbon dioxide, and carbonyl sulphide systems towards, 11, 57

- oxide chelates of carbohydrate-directed macromolecules, **8**, 221
- Transport properties, hard-sphere theories of, **14**, 317
- Triple bond in dimolybdenum and ditungsten hexa-alkoxides and C-C, C-N, C-O triple bonds, reactions involving the, **14**, 69
- Tunable lasers, **3**, 293
- Unimolecular reactions, current aspects of, **12**, 163
- 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 and n.m.r. spectroscopic studies, structure in solvents and solutions, **12**, 1
- , 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
- Vibrationally excited molecules, the collision dynamics of, **14**, 141
- Viologens, electrochemistry of, **10**, 49
- Vitamin B<sub>12</sub>, retrospects and prospects, **9**, 125
- Vitamin D, chemistry of: the hormonal calciferols, **6**, 83
- Vitamin D, recent syntheses in, **9**, 449
- Ylides, arsonium, (with some mention also of arsinimines, stibonium and bismuthonium ylides), **16**, 45
- Ylides, the chemistry of peroxonium ions and dioxygen, **14**, 399