

Michael Franz Lappert 1928 -2014

Archive of Publications

This list of references has been compiled from a database obtained from Mendeley and cross-checked against a list of publications made by Mike himself, and lent by Lorna Lappert. It includes a number of early book reviews, and chapters written in books edited by other authors. Patents and some contributions to *Inorganic Reactions and Methods* and *Journal of Organometallic Chemistry Library* have been omitted. Braces indicating cyclic structures have been omitted from linear typed formulae, so care should be taken if titles of papers are copied without reference to the original journals.

J David Smith August 2018

- (1) Gerrard, W.; Lappert, M. F. Interaction of Alcohols and Boron Trichloride. *J. Chem. Soc.* **1951**, 2545–2550.
- (2) Gerrard, W.; Lappert, M. F. Interaction of Boron Trichloride with Optically Active Alcohols and Ethers. *J. Chem. Soc.* **1951**, 1020–1024.
- (3) Gerrard, W.; Lappert, M. F. Preparation of Alkyl Borates by Means of Pyridine-Boron Trichloride Complex. *Chem. Ind.* **1952**, (3), 53–55.
- (4) Gerrard, W.; Lappert, M. F. Fission of Mixed Ethers by Boron Trichloride. *J. Chem. Soc.* **1952**, 1486–1490.
- (5) Lappert, M. F. Studies with Boron Trichloride and Organic Sulphides .1. The Preparation and Properties of Di-N-butyl Sulphide-Boron Trichloride. *J. Chem. Soc.* **1953**, 2784–2788.
- (6) Lappert, M. F. Reaction Sequences in Alcohol Boron Trichloride Pyridine Systems. *J. Chem. Soc.* **1953**, 667–673.
- (7) Gerrard, W.; Lappert, M. F. The Preparation and Stability of Alkyl Dichloroboronites. *J. Chem. Soc.* **1955**, 3084–3088.
- (8) Colclough, T.; Gerrard, W.; Lappert, M. F. The Preparation and Properties of Triphenyl Borate and the Phenoxyboron Chlorides. *J. Chem. Soc.* **1955**, 907–911.
- (9) Lappert, M. F. Reactions in boron trifluoride-n-butyl alcohol-Tri-n-butyl borate Systems. *J. Chem. Soc.* **1955**, 784–790.
- (10) Edwards, J. D.; Gerrard, W.; Lappert, M. F. Interaction of Boron Trichloride with Chloro-Alcohols and with Cyclic Ethers. *J. Chem. Soc.* **1955**, 1470–1475.
- (11) Brindley, P. B.; Gerrard, W.; Lappert, M. F. The Preparation of Esters of Alkyl-Boronic and Aryl-Boronic Acids. *J. Chem. Soc.* **1955**, 2956–2958.

- (12) Brindley, P. B.; Gerrard, W.; Lappert, M. F. Stability, Solvolysis, and Co-ordination Reactions of Esters of Boronic Acids and their Halogen Derivatives. *J. Chem. Soc.* **1956**, 1540–1545.
- (13) Colclough, T.; Gerrard, W.; Lappert, M. F. Preparation, Stability, and Complex Formation of Aryloxyboron Compounds. *J. Chem. Soc.* **1956**, 3006–3010.
- (14) Lappert, M. F. Organic Compounds of Boron. *Chem. Rev.* **1956**, 56 (5), 959–1064.
- (15) Abel, E. W.; Dandegaonker, S. H.; Gerrard, W.; Lappert, M. F. The Preparation and Characterising Constants of the Phenylboron Chlorides. *J. Chem. Soc.* **1956**, 4697–4699.
- (16) Lappert, M. F. The Preparation and Stability of Dialkyl Chloroboronates. *J. Chem. Soc.* **1956**, 1768–1774.
- (17) Gerrard, W.; Lappert, M. F.; Silver, H. B. The Fission of Alkyl Allyl Ethers by Boron Trichloride. *J. Chem. Soc.* **1956**, 4987–4988.
- (18) Brindley, P. B.; Gerrard, W.; Lappert, M. F. Interaction of Boron and Hydrogen Halides with Esters of Boronic Acids. *J. Chem. Soc.* **1956**, 824–828.
- (19) Gerrard, W.; Lappert, M. F.; Silver, H. B. The Interaction of Boron Trichloride with Unsaturated Alcohols and Ethers. *J. Chem. Soc.* **1956**, 3285–3288.
- (20) Abel, E. W.; Gerrard, W.; Lappert, M. F. The Preparation of Esters of Diphenylboronous Acid. *J. Chem. Soc.* **1957**, 112–115.
- (21) Lappert, M. F. Pyridinium Tetrachloroborate and Tetrabromoborates. *Proc. Chem. Soc. London* **1957**, 121.
- (22) Dandegaonker, S. H.; Gerrard, W.; Lappert, M. F. Phenylchloroboronites and Phenylboronates. *J. Chem. Soc.* **1957**, 2872–2877.
- (23) Bujwid, Z. J.; Gerrard, W.; Lappert, M. F. Reactions in Boron Tribromide Alcohol Systems. *Chem. Ind.* **1957**, (42) 1386–1387.
- (24) Gerrard, W.; Lappert, M. F.; Silver, H. B. Further Investigations in the Butenyl-Boron Trichloride System. *J. Chem. Soc.* **1957**, 1647–1652.
- (25) Blau, J. A.; Gerrard, W.; Lappert, M. F. The Interaction of Ethylene Glycol with Boron Trichloride and the Alkoxyboron Chlorides. *J. Chem. Soc.* **1957**, 4116–4120.
- (26) Gerrard, W.; Lappert, M. F.; Pearce, C. A. Alkyl Bisdialkylaminoboronites and Related Compounds. *J. Chem. Soc.* **1957**, 381–386.
- (27) Frazer, M. J.; Gerrard, W.; Lappert, M. F. The Interaction of Aldehydes with Boron Trichloride. *J. Chem. Soc.* **1957**, 739–744.

- (28) Edwards, J. D.; Gerrard, W.; Lappert, M. F. Reactions in Boron Trichloride-Cyclic Ether Systems. *J. Chem. Soc.* **1957**, 348–356.
- (29) Gerrard, W.; Lappert, M. F.; Shafferman, R. The Preparation and Properties of Di-n-butylboronous Anhydride. *J. Chem. Soc.* **1957**, 3828–3833.
- (30) Abel, E. W.; Edwards, J. D.; Gerrard, W.; Lappert, M. F. The Preparation and Properties of Certain Chloroalkoxyboron Chlorides and Trischloroalkylborates. *J. Chem. Soc.* **1957**, 501–505.
- (31) Lappert, M. F. Neue Ergebnisse aus der Chemie Organischer Bor-Verbindungen. *Angew. Chemie-International Ed.* **1957**, 69 (21), 684–685.
- (32) Abel, E. W.; Gerrard, W.; Lappert, M. F. The Properties of the Anhydride and Esters of Diphenylboronous Acid. *J. Chem. Soc.* **1957**, 3833–3838.
- (33) Gerrard, W.; Lappert, M. F.; Silver, H. B. A Boron Trichloride-Catalysed *ortho*-Claisen Rearrangement. *Proc. Chem. Soc. London* **1957**, (1) 19–20.
- (34) Abel, E. W.; Gerrard, W.; Lappert, M. F. Reactions of the Phenylboron Chlorides and Bromides and the Chemistry of Normal-Butyl Phenylboronite. *J. Chem. Soc.* **1957**, 5051--.
- (35) Dandegaonker, S. H.; Gerrard, W.; Lappert, M. F. The Reactions of Phenylboron Dichloride with Ethers. *J. Chem. Soc.* **1957**, 2893–2897.
- (36) Edwards, J. D.; Gerrard, W.; Lappert, M. F. Interaction of Boron Trichloride with Alkyl Chloroalkyl Ethers. *J. Chem. Soc.* **1957**, 377–381.
- (37) Bellamy, L. J.; Gerrard, W.; Lappert, M. F.; Williams, R. L. Infrared Spectra of Boron Compounds. *J. Chem. Soc.* **1958**, 2412–2415.
- (38) Gerrard, W.; Lappert, M. F.; Pearce, C. A. Chemistry of Certain Novel Organic Boron Compounds. *Chem. Ind.* **1958**, (10) 292–293.
- (39) Abel, E. W.; Gerrard, W.; Lappert, M. F.; Shafferman, R. Back-Co-ordination from Oxygen to Boron in Organoboron Compounds. *J. Chem. Soc.* **1958**, 2895–2897.
- (40) Lappert, M. F. Cyclic Organic Boron Compounds .2. Chemical Properties of n-Butyl Metaborate. *J. Chem. Soc.* **1958**, 3256–3259.
- (41) Gerrard, W.; Lappert, M. F. Reactions of Boron Trichloride with Organic Compounds. *Chem. Rev.* **1958**, 58 (6), 1081–1111.
- (42) Abel, E. W.; Gerrard, W.; Lappert, M. F. Production of Oct-2-ene and Oct-3-ene by the Dehydration of Octan-1-ol and by Pyrolysis of n-Octyl Diphenylboronite. *Chem. Ind.* **1958**, (6) 158–159.
- (43) Gerrard, W.; Lappert, M. F.; Shafferman, R. Stability and Aromatic Character in Boron Chelates. *Chem. Ind.* **1958**, (24), 722.

- (44) Gerrard, W.; Lappert, M. F.; Shafferman, R. The Chemistry of Certain Acyloxyboron Compounds and Boron Chelates. *J. Chem. Soc.* **1958**, 3648–3652.
- (45) Lappert, M. F. Cyclic Organic Boron Compounds .1. Preparation, Characterisation, and Stability of Esters of Metaboric Acid. *J. Chem. Soc.* **1958**, 2790–2793.
- (46) Duncanson, L. A.; Gerrard, W.; Lappert, M. F.; Pyszora, H.; Shafferman, R. The Infrared Spectra and Structures of Some Acyloxy-Derivatives of Boron. *J. Chem. Soc.* **1958**, 3652–3656.
- (47) Abel, E. W.; Gerrard, W.; Lappert, M. F. Dephenylation Reactions of Phenylboron Acids and Esters. *J. Chem. Soc.* **1958**, 1451–1453.
- (48) Bujwid, Z. J.; Gerrard, W.; Lappert, M. F. Boronation of Benzene. *Chem. Ind.* **1959**, (35) 1091–1092.
- (49) Aubrey, D. W.; Lappert, M. F. Cyclic Organic Boron Compounds .4. B-Amino-borazole and B-Alkoxy-borazole and their Precursors the Tris(primary amino)borons and (primary amino)boron Alkoxides. *J. Chem. Soc.* **1959**, 2927–2931.
- (50) Lappert, M. F. Cyclic Organic Boron Compounds .3. B-Aminoborazoles and their Polycondensates. *Proc. Chem. Soc. London* **1959**, (2), 59.
- (51) Dandegaonker, S. H.; Gerrard, W.; Lappert, M. F. Polycondensations and Certain Other Reactions of Arylboron Chlorides. *J. Chem. Soc.* **1959**, 2076–2078.
- (52) Gerrard, W.; Lappert, M. F.; Mountfield, B. A. Interaction of Boron Trichloride with Catechol, Quinol, Resorcinol, and Pyrogallol. *J. Chem. Soc.* **1959**, 1529–1535.
- (53) Aubrey, D. W.; Lappert, M. F. Steric Hindrance and Assistance in Displacement Reactions of Tervalent Boron Compounds. *Proc. Chem. Soc. London* **1960**, (4), 148–149.
- (54) Aubrey, D. W.; Lappert, M. F.; Pyszora, H. Infrared Spectra of Open-Chain Boron-Nitrogen Compounds. *J. Chem. Soc.* **1960**, 5239–5246.
- (55) Gerrard, W.; Lappert, M. F.; Wallis, J. W. The Preparation and Properties of Coordination Compounds of Boron Trichloride and Nitriles. *J. Chem. Soc.* **1960**, 2178–2181.
- (56) Gerrard, W.; Lappert, M. F.; Wallis, J. W. Interaction of Boron Trichloride and Amides or Oximes, and Allied Reactions. *J. Chem. Soc.* **1960**, 2141–2144.
- (57) Blau, J. A.; Gerrard, W.; Lappert, M. F.; Mountfield, B. A.; Pyszora, H. Infrared Spectra of Ethylene and *Ortho*-phenylene Derivatives of Boric Acid. *J. Chem. Soc.* **1960**, 380–384.
- (58) Gerrard, W.; Lappert, M. F.; Pyszora, H.; Wallis, J. W. Infrared Spectra of Nitriles and their Complexes with Boron Trichloride. *J. Chem. Soc.* **1960**, 2182–2186.

- (59) Joy, F.; Lappert, M. F. Chloroboration and Allied Reactions of Olefins. *Proc. Chem. Soc. London* **1960**, 353–354.
- (60) Lappert, M. F. Neue Methoden zur Synthese von Organobor-Verbindungen. *Angew. Chemie-International Ed.* **1960**, 72 (1), 36.
- (61) Lappert, M. F.; Pyszora, H. Boron Pseudohalides. *Proc. Chem. Soc. London* **1960**, (10), 350–351.
- (62) Gerrard, W.; Lappert, M. F.; Pyszora, H.; Wallis, J. W. Spectra and Structure of Amide Complexes. *J. Chem. Soc.* **1960**, 2144–2151.
- (63) Blau, J. A.; Gerrard, W.; Lappert, M. F. Further Experiments with Ethylene Derivatives of Boric Acid. *J. Chem. Soc.* **1960**, 667–670.
- (64) Aubrey, D. W.; Pyszora, H.; Lappert, M. F. Cyclic Organic Boron Compounds .5. Infrared Spectra of Borazoles and Boroxoles. *J. Chem. Soc.* **1961**, 1931.
- (65) Lappert, M. F.; Majumdar, M. K. Unsymmetrically Substituted Borazoles and some Bicyclic Derivatives thereof. *Proc. Chem. Soc. London* **1961**, 425.
- (66) Lappert, M. F.; Smith, J. K. Reactions of Sulphoxides with Some Group III And IV Halides. *J. Chem. Soc.* **1961**, 3224.
- (67) Barfield, P. A.; Lee, J.; Lappert, M. F. π -Bonding and Hindered Rotation in Inorganic Systems. *Proc. Chem. Soc. London* **1961**, 421.
- (68) Lappert, M. F. Co-ordination Compounds Having Carboxylic Esters as Ligands .1. Stoichiometry, Structure, and Stereochemistry. *J. Chem. Soc.* **1961**, 817.
- (69) Lappert, M. F.; Leigh G.J. Polymers Containing Boron and Nitrogen. In *Developments in Inorganic Polymer Chemistry*; Lappert, M. F., Leigh, G., Eds.; Elsevier, **1962**.
- (70) Aubrey, D. W.; Majumdar, M. K.; Lappert, M. F. Trisaminoboranes. *J. Chem. Soc.* **1962**, 4088.
- (71) Jones, K.; Lappert, M. F. Aminostannanes, Stannylamines, and Stannazanes. *Proc. Chem. Soc. London* **1962**, 358
- (72) Lappert, M. F. Co-ordination Compounds Having Carboxylic Esters as Ligands .2. Relative Acceptor Strengths of Some Group III and IV Halides. *J. Chem. Soc.* **1962**, 542-548.
- (73) Lappert, M. F.; Pyszora, H. Pseudohalides .1. Preparation, Characterisation, and Reactions of Iso- and Isothio-cyanatoborazoles. *J. Chem. Soc.* **1963**, 1744.
- (74) Lappert, M. F.; Prokai, B. Chloroboration and Allied Reactions of Unsaturated Compounds .1. Chloroboration and Organoboration of Isocyanates and Isothiocyanates. *J. Chem. Soc.* **1963**, 4223.

- (75) Lappert, M. F.; Majumdar, M. K. The three-co-ordinate Boron-Nitrogen 4-membered Ring System (1,3-diaza-2,4-boretane). *Proc. Chem. Soc. London* **1963**, 88.
- (76) Lappert, M. F.; Majumdar, M. K. Cyclic Boron Compounds 6 A BN-Substituted Cyclobutadiene Analogue. Synthesis, Structure, Stereochemistry, and Mechanism of Formation. In *Advances in Chemistry Series*; **1964**; p 208.
- (77) Cragg, R. H.; Lappert, M. F. Cyclic Boron Compounds 7. Cyclic Boroureas and Borocarbamates. In *Advances in Chemistry Series*; **1964**; p 220.
- (78) Cragg, R. H.; Lappert, M. F.; Tilley, B. P. Chloroboration and Allied Reactions of Unsaturated Compounds .3. Aminoboration and Alkoxyboration of Isocyanates and Isothiocyanates. *J. Chem. Soc.* **1964**, 2108.
- (79) Lappert, M. F.; Prokai, B. Chloroboration and Allied Reactions of Unsaturated Compounds .2. Haloboration and Phenylboration of Acetylenes and the Preparation of some Alkynylboranes. *J. Organomet. Chem.* **1964**, 1, 384–400.
- (80) Lappert, M. F.; Srivasta.G. Triborylamines. *Proc. Chem. Soc. London* **1964**, 120--.
- (81) Jones, K.; Lappert, M. F. Metal Amines as Reagents for Synthesis of Organometallic Compounds. *Proc. Chem. Soc. London* **1964**, 22--.
- (82) Baldwin, J.; Lappert, M. F.; Pedley, J. B; Riley, P.N.K.; Sedgwick, R. Ionisation Potentials and Pi-Bonding in the Series $Cl_nB(NMe_2)_{3-n}$. *Inorg. Nucl. Chem.Lett.* **1965**, 1, 57.
- (83) Chandra, G.; Lappert M.F. Reactions of Amino Derivatives of Transition Metals. *Inorg. Nucl. Chem. Lett.* **1965**, 1, 83.
- (84) Lappert, M. F.; Srivastava, G. Amino Derivatives of Metals and Metalloids as Ligands. *Inorg. Nucl. Chem. Lett.* **1965**, 1, 63.
- (85) Jones, K.; Lappert, M. F. Amino Derivatives of Metals and Metalloids .3. Metal Amines as Reagents for Synthesis of Organometallics - Especially Reactions of Aminostannanes with Protic Species. *J. Organomet. Chem.* **1965**, 3 (4), 295--.
- (86) George, T. A.; Jones, K.; Lappert, M. F. Amino-Derivatives of Metals and Metalloids .2. Aminostannylation of Unsaturated Substrates and Infrared Spectra and Structures of Carbamato- and Dithiocarbamato-Trimethylstannanes and Related Compounds. *J. Chem. Soc.* **1965**, 2157--.
- (87) Jones, K.; Lappert, M. F. Amino-Derivatives of Metals and Metalloids .1. Preparation of Aminostannanes, Stannylamines and Stannazanes. *J. Chem. Soc.* **1965**, 1944.
- (88) Lappert, M. F.; Pyszora, H.; Rieber, M. Pseudohalides .2. Preparation, Characterisation and Reactions of 3-Coordinate Mononuclear Iso- and Isothiocyanatoboranes. *J. Chem. Soc.* **1965**, 4256--.

- (89) Lappert, M. F. Progress in Boron Chemistry. *Nature* **1965**, 206 (4979), 76. book review
- (90) Lappert, M. F. 'Boron, Metallo-Boron Compounds and Boranes.' Adams, R, Ed *Chem. Br.* **1965**, 1 (4), 160-161.
- (91) Lappert, M. F.; Smith, J. K. Co-ordination Compounds having Carboxylic Esters as Ligands .3. Thermochemistry of Complexes of Ethyl Acetate with Group 3 Halides. *J. Chem. Soc.* **1965**, 5826--.
- (92) Lappert, M. F. Beryllium Oxide. *Nature* **1965**, 208 (5005), 9. book review
- (93) Lappert, M. F.; Smith, J. K. Thermochemistry of Complexes of Boron Trifluoride with Dimethyl Sulphoxide and Ethyl Acetate and Thermal Decomposition of Diphenylsulphoxide-Boron Trichloride Complex. *J. Chem. Soc.* **1965**, 7102.
- (94) Lappert, M. F.; Majumdar, M. K. Preparation of Organoboranes; Relative Reactivities of Competing B-Y Sites towards Organolithium and -Magnesium Compounds. *J. Organomet. Chem.* **1966**, 6, 316.
- (95) Lappert, M. F.; Majumdar, M. K.; Tilley, B. P. Cyclic Boron Compounds .8. Amino- and Hydrazino-Boranes and their Cyclic Dimers. *J. Chem. Soc. A -Inorganic Phys. Theor.* **1966**, No. 11, 1590--.
- (96) Lappert, M. F. Correction. *Chem. Commun.* **1966**, 925.
- (97) Cragg, R. H.; Lappert, M. F. Amino-Derivatives of Metals and Metalloids .4. Aminosilylation and Aminophosphination of some Unsaturated Substrates. *J. Chem. Soc. A Inorg. Phys. Theor.* **1966**, 82.
- (98) Cardin, D. J.; Lappert, M. F. Interaction of Amido- and Hydrido-derivatives of Metals and Metalloids - A General Synthesis of Compounds having Metal-Metal Bonds. *Chem. Commun.* **1966**, 506.
- (99) Jefferson, R.; Lappert, M. F.; Prokai, B.; Tilley, B. P. Chloroboration and Allied Reactions of Unsaturated Compounds .4. Boration of Di-*p*-tolylcarbodiimide. *J. Chem. Soc. A Inorg. Phys. Theor.* **1966**, 1584.
- (100) Lappert, M. F.; Seyferth D - Annual Surveys of Organometallic Chemistry. *Chem. Br.* **1966**, 2 (8), 356.
- (101) Lappert, M. F.; Srivasta.G. Metal Halide Complexes of Hexamethylcyclotriphosphazatriene. *J. Chem. Soc. A Inorg.Phys. Theor.* **1966**, 210.
- (102) Lappert, M. F. Inorganic Chemistry vol 1 Principles and Non-Metals. Phillips C S G and Williams, R J P, *Chem. Br.* **1966**, 2 (9), 404, book review
- (103) George, T. A.; Lappert, M. F. Metathetical Reactions of Organotin Compounds - Their Use in Amination. *Chem. Commun.* **1966**, 463.

- (104) Joy, F.; Lappert, M. F.; Prokai, B. Chloroboration and Allied Reactions of Unsaturated Compounds .5. Haloboration and Phenylboration of Olefins - and Preparation of Hexaphenyl-1,4-diboracyclohexa-2,5-diene. *J. Organomet. Chem.* **1966**, 5 (6), 506--.
- (105) Lappert, M. F.; Pedley, J. B.; Riley, P. N. K.; Tweedale, A. Ionisation Potentials and Electronic Spectra of Halogeno- and Amino-Boranes and a Study of some Redistribution Reactions. *Chem. Commun.* **1966**, 788.
- (105a) Lappert, M, Pyszora, H, Pseudohalides of Group IIIB and IVB Elements *Adv. Inorg. Chem. Rad.* **1966** 9 133-184
- (106) Lappert, M.; Prokai, B. Insertion Compounds of Metals and Metalloids involving Unsaturated Substrates. *Adv. Organomet. Chem.* **1967**, 5, 225.
- (107) Lappert, M. F. Annual Surveys of Organometallic Chemistry, 1965. Seyferth, D and King, R B, *Chem. Br.* **1967**, 3 (10), 441 book review
- (108) Lappert, M. F. Organic Compounds of Boron, Aluminium, Gallium, Indium and Thallium. Nesmeyanov, A N and Sokolik, R A Eds, *J. Organomet. Chem.* **1967**, 8 (1), P12. book review
- (109) Baldwin, J. C.; Lappert, M. F.; Pedley, J. B.; Treverton. J. A. Bonding Studies of Organometallic Compounds of Boron and Group 4 Elements .1. Heats of Hydrolysis and Bond Energies for some Trimethylsilyl Derivatives. *J. Chem. Soc. A Inorg. Phys. Theor.* **1967**, 1980.
- (110) Horder, J. R.; Lappert, M. F. Organometallic Insertion Reactions of Diketen - Synthesis of β -Ketoenolates. *Chem. Commun.* **1967**, 485.
- (111) Lappert, M. F. Correction. *Chem. Commun.* **1967**, 1148.
- (112) Cardin, D. J.; Lappert, M. F. Dimethylaminotrimethylstannane A Powerful Dehydrochlorinating Reagent. *Chem. Commun.* **1967**, 1034.
- (113) Lappert, M. F.; Pyszora, H. Pseudohalides .3. Infrared, Ultraviolet, Proton Magnetic Resonance Spectra of Boron Isocyanates and Isothiocyanates. *J. Chem. Soc. A - Inorganic Phys. Theor.* **1967**, 854.
- (114) Cragg, P. H.; Lappert, M. F.; Nöth, H.; Schweize, P.; Tilley, B. P. *Beitrage zur Chemie des Bors* .39. Die Aminoborierung von Kohlendioxid und Kohlenstoffdisulfid. *Chem. Berichte-Recueil* **1967**, 2377--.
- (115) Chandra, G.; George, T. A.; Lappert, M. F. Carbon-Carbon Insertion Reactions into Metal-Nitrogen Bonds. *Chem. Commun.* **1967**, 116.
- (116) Lappert, M. F. Inorganic Chemistry - Phillips, C S G and Williams R J P, vol 2 Metals *Chem. Br.* **1967**, 3 (7), 308, book review

- (117) Druce, P. M.; Lappert, M. F.; Riley, P. N. K. Boron Halides as Reagents in Inorganic Chemistry - Synthesis of Anhydrous Metal Bromides and Binuclear Halogen-Bridged Platinum(II) Cations. *Chem. Commun.* **1967**, 486.
- (118) Cragg, R. H.; Lappert, M. F.; Tilley, B. P. Chloroboration and Allied Reactions of Unsaturated Compounds .6. Thiaboration and other Aspects of Boron-Sulphur Chemistry. *J. Chem. Soc. A –Inorg. Phys. Theor.* **1967**, 947.
- (119) Lappert, M. F.; Lorberth, J. Organometallic Diazoalkanes. *Chem. Commun.* **1967**, 836.
- (120) Lappert, M. F.; Prokai, B. Boron Halides as Reagents in Inorganic Syntheses .1. A General Method for Preparation of Anhydrous Bromides and Oxybromides and a Comment on Reactions with Elemental Sulphur. *J. Chem. Soc. A Inorg. Phys. Theor.* **1967**, 129.
- (121) Lappert, M. F.; Srivasta, G. Amido-Derivatives of Metals and Metalloids .5. Lewis Acid Behaviour of certain Borazines and Aminoboranes. *J. Chem. Soc. A –Inorg. Phys. Theor.* **1967**, 602.
- (122) Lappert, M. F. Organoboron Chemistry. Steinberg, H *Nature* **1967**, 214 (5087), 537--
.book review
- (123) Cardin, D. J.; Keppie, S. A.; Kingston, B. M.; Lappert, M. F. Organosilyl Derivatives of Zirconium, Molybdenum and Tungsten. *Chem. Commun.* **1967**, 1035.
- (124) Cardin, D.; Keppie, S.; Lappert, M. Metal-Metal Bonds between Elements of Group VIA and Group IVB. *Inorg. Nucl. Chem. Lett.* **1968**, 365.
- (125) Kingston, B.; Lappert, M. Metal-Metal Bonds between Elements of Group IVA and Group IVB. *Inorg. Nucl. Chem. Lett.* **1968**, 4, 371.
- (126) Lappert, M.F; Smith, J. D; Walton, D R M. Organometallic Compounds Part (I) The Main Group Elements. *Ann. Reports Chem. Soc.* **1968**, 283.
- (127) George, T. A.; Lappert, M. F. Amido Derivatives of Metals and Metalloids .7. Carbon-Carbon Insertion Reactions into Metal-Nitrogen Bonds and Related Systems. *J. Organomet. Chem.* **1968**, 14 (2), 327.
- (128) Chandra, G.; Lappert, M. F. Amido-derivatives of Metals and Metalloids .6. Reactions of Titanium(IV) Zirconium(IV) and Hafnium(IV) Amides with Protic Compounds. *J. Chem. Soc. A –Inorg. Phys. Theor.* **1968**, 1940.
- (129) Lappert, M. F.; Travers, N. F. Hydrostannation of some Iridium(I) Complexes. *Chem. Commun.* **1968**, 1569.
- (130) Horder, J. R.; Lappert, M. F. Chloroboration and Allied Reactions of Unsaturated Compounds .8. Insertion of Isocyanates and Isothiocyanates into Al-Et and Al-Br Bonds. *J. Chem. Soc. A –Inorg. Phys. Theor.* **1968**, 2004.

- (131) Barfield, P. A.; Lappert, M. F.; Lee, J. Nuclear Magnetic Resonance Studies of π -Bonding in Aminoboranes .2. Barrier to Internal Rotation about the Boron-Nitrogen Bond. *Trans. Faraday Soc.* **1968**, *64*, 2571.
- (132) Barfield, P. A.; Lappert, M. F.; Lee, J. Nuclear Magnetic Resonance Studies of π -Bonding in Aminoboranes .1. Ambient Temperature Spectra. *J. Chem. Soc. A -Inorg. Phys. Theor.* **1968**, 554.
- (133) Lappert, M. F.; Pyszora, H. Pseudohalides .4. Infrared Spectra and Thermochemistry of Complexes PhBX_2L ($\text{X} = \text{Cl}, \text{Br}, \text{NCO}, \text{or NCS}$; $\text{L} = \text{C}_5\text{H}_5\text{N}$ or EtOAc) and Relative Acceptor Strengths of Halogeno- and Pseudohalogenoboranes - With Notes on the Chemistry of Four-co-ordinate Isocyanato- and Isothiocyanatoboranes *J. Chem. Soc. A -Inorg Phys. Theor.* **1968**, 1024.
- (134) Jenkins, A. D.; Lappert, M. F.; Srivasta.R.C. Initiation of Polymerization by Inorganic Amides. *J. Polym. Sci. Part B-Polymer Lett.* **1968**, *6*, 865.
- (135) Dorokhov, V. A.; Lappert, M. F. A Monomeric Aldiminoborane and Evidence for BN π -Bonding. *Chem. Commun.* **1968**, 250.
- (136) Lappert, M. F.; Litzow, M. R.; Pedley, J. B.; Riley, P. N. K.; Tweedale, A. Bonding Studies of Compounds of Boron and Group 4 Elements .2. Ionisation Potentials of Boron Halides and Mixed Halides by Electron Impact and by Molecular Orbital Calculations. *J. Chem. Soc. A -Inorg. Phys. Theor.* **1968**, 3105.
- (137) Lappert, M. F.; Lynch, J. Perfluorophenyl-silicon Compounds. *Chem. Commun.* **1968**, 750.
- (138) Lappert, M. F.; Smith, J. D.; Walton, D. R. M. Organometallic Compounds .I. Main Group Elements. *Annu. Reports Prog. Chem. Sect. B-Organic Chem.* **1968**, *65*, 283.
- (139) Horder, J. R.; Lappert, M. F. Exchange Reactions between (A) Ethylaluminium Chlorides or Aluminium Halides and (B) Various Silanes or Trimethyltin Chloride. *J. Chem. Soc. A -Inorg Phys. Theor.* **1968**, 1167.
- (140) Dorokhov, V. A.; Lappert, M. F. Cyclic Boron Compounds .9. Aldiminoboranes and their Cyclic Dimers. *J. Chem. Soc. A -Inorg Phys. Theor.* **1969**, 433.
- (141) Alyea, E. C.; Bradley, D. C.; Lappert, M. F.; Sanger, A. R. Lower Valent Dialkylamides of Titanium and Vanadium. *J. Chem. Soc. D-Chem Commun.* **1969**, 1064.
- (142) Lappert, M. F. Organometallic Chemistry. *Chem. Br.* **1969**, *5* (8), 342--346.
- (143) Lappert, M. F.; Poland, J. S. Heterocyclic Syntheses with the Co-ordinated Ligand CN_2^{2-} - Reactions of Bistrimethylstanyldiazomethane and Trimethylsilyldiazomethane. *J. Chem. Soc. D Chem Commun.* **1969**, 156.

- (144) Lappert, M. F.; Smith, J. D.; Walton, D. R. M. Chapter 9. Organometallic Compounds. Part (ii) The Main Group Elements. *Annu. Rep. Sect. B Organic Chem.* **1969**, *66*, 271-308.
- (145) Keppie, S. A.; Lappert, M. F. Insertion into Metal-Carbon and Hydrogen-Carbon Bonds - Synthesis of Group VIa Metal Cyclopentadienylcarbonylmetallates and Hydrides. *J. Organomet. Chem.* **1969**, *19*, P5.
- (146) Druce, P. M.; Kingston, B. M.; Lappert, M. F.; Spalding, T. R.; Srivastava, R. C. Metallocene Halides .1. Synthesis, Spectra, and Redistribution Equilibria of Di- π -cyclopentadienyldihalogenotitanium(IV), -zirconium(IV), and -hafnium(IV). *J. Chem. Soc. A -Inorg Phys. Theor.* **1969**, 2106.
- (147) Lappert, M. F.; Poland, J. S. 1,3-Organometallic Insertion Reactions with Trimethylsilyldiazomethane - Synthesis of (Trimethylsilyl)methylazo-Transition Metal Complexes. *J. Chem. Soc. D-Chem Commun.* **1969**, 1061.
- (148) Horder, J. R.; Lappert, M. F. Chloroboration and Allied Reactions of Unsaturated Compounds .9. Organometallic Insertion Reactions of Diketen - Synthesis of β -Keto-Enolates. *J. Chem. Soc. A -Inorg. Phys. Theor.* **1969**, 173.
- (149) Lappert, M. F.; Simpson, J.; Spalding, T. R. Bonding Studies of Compounds of Group 4 Elements - Ionisation Potentials of the Me₃M Radicals. *J. Organomet. Chem.* **1969**, *17*, P1.
- (150) George, T. A.; Lappert, M. F. Amido Derivatives of Metals and Metalloids .8. Metathetical Reactions of Organostannanes - their Use in Amination. *J. Chem. Soc. A Inorg. Phys. Theor.* **1969**, 992.
- (151) Druce, P. M.; Kingston, B. M.; Lappert, M. F.; Srivastava, R. C.; Frazer, M. J.; Newton, W. E. Metallocene Halides .2. Low Frequency Infrared and Raman Spectra of Di- π -cyclopentadienyldialogenotitanium(IV), -zirconium(IV), and -hafnium(IV). *J. Chem. Soc. A -Inorg Phys. Theor.* **1969**, 2814.
- (152) Chandra, G.; George, T. A.; Lappert, M. F. Amido-derivatives of Metals and Metalloids .9. Reactions of Tin(IV) and Titanium(IV) Amides with Compounds having Carbonyl and Sulphinyl Multiple Bonds. *J. Chem. Soc. C-Organic* **1969**, 2565.
- (153) Lappert, M.; Poland, J. S. α -Heterodiazalkanes and the Reaction of Diazoalkanes with Derivatives of Metals and Metalloids. *Adv. Organometal. Chem.* **1970**, *9*, 397-436.
- (154) Lappert, M. F.; Travers, N. F. Binuclear Organometallic Compounds .2. Reactions of Triorganotin Hydrides with Iridium(I) and Rhodium(I) Complexes. *J. Chem. Soc. A - Inorg. Phys. Theor.* **1970**, 3303.
- (155) Lappert, M. F.; Lorberth, J.; Poland, J. S. Organometallic Diazoalkanes .1. Synthesis and Characterisation of Simple Group-IVb Organometallic Diazomethanes, and Tin-Carbon Cleavage Reactions of Bis(trimethylstannyl)diazomethane. *J. Chem. Soc. A - Inorg Phys. Theor.* **1970**, 2954.

- (156) Jenkins, A. D.; Lappert, M. F.; Srivastava, R. C. Amido Derivatives of Metals and Metalloids .12. Further Reactions with Protic Compounds. *J. Organomet. Chem.* **1970**, 23, 165.
- (157) Lappert, M. F.; Litzow, M. R.; Riley, P. N. K.; Spalding, T. R.; Tweedale, A.; Pedley, J. B. Bonding Studies of Compounds of Boron and Group IV Elements .3. First Ionisation Potentials of Some Simple Boron Compounds by Electron Impact and by a New Empirical Molecular Orbital Method. *J. Chem. Soc. A -Inorg. Phys. Theor.* **1970**, 2320.
- (158) Cardin, D. J.; Keppie, S. A.; Lappert, M. F. Binuclear Organometallic Compounds .1. Amine Elimination Reaction for Synthesis of Compounds Containing Bonds between Elements of Group-IV and Transition Metals. *J. Chem. Soc. A -Inorganic Phys. Theor.* **1970**, 2594.
- (159) Collier, M. R.; Lappert, M. F.; Truelock, M. M. μ -Methylene Transition Metal Binuclear Compounds - Complexes with $\text{Me}_3\text{SiCH}_2^-$ and Related Ligands. *J. Organomet. Chem.* **1970**, 25 C36.
- (160) Lappert, M. F. Binuclear Organometallic Compounds. *Angew. Chemie-Int. Ed.* **1970**, 9 (11), 910.
- (161) Cardin, D. J.; Walton, D. R. M.; Smith, J. D.; Lappert, M. F. Organometallic Compounds .1. Main Group Elements. *Annu. Reports Prog. Chem. Sect. B-Organic Chem.* **1970**, 67, 271.
- (162) Collier, M. R.; Kingston, B. M.; Lappert, M. F. Participation of Neighbouring Transition-Metal in Nucleophilic C-Si Cleavage of $\pi\text{-C}_5\text{H}_5(\text{CO})_3\text{MoCH}_2\text{SiMe}_3$: Possible Formation of an Anionic Transition-Metal Carbene Intermediate. *J. Chem. Soc. D-Chem Commun.* **1970**, 1498.
- (163) Chandra, G.; Jenkins, A. D.; Lappert, M. F.; Srivastava, R. C. Amido-Derivatives of Metals and Metalloids .10. Reactions of Titanium(IV), Zirconium(IV), and Hafnium(IV) Amides with Unsaturated Substrates, and some Related Experiments with Amides of Boron, Silicon, Germanium, and Tin(IV). *J. Chem. Soc. A -Inorg Phys. Theor.* **1970**, 2550.
- (164) Abel, E. W.; Keppie, S. A.; Lappert, M. F.; Moorhouse, S. Oxidative Cleavage of Metal-Metal Bond of Bi- or Poly-Nuclear Carbonyl Complexes by Cyclopentadienyl(trimethyl)stannane. *J. Organomet. Chem.* **1970**, 22 (3), C31.
- (165) Cetinkaya, B.; King, G. H.; Krishnam, S. S.; Lappert, M. F.; Pedley, J. B. Photoelectron Spectra of Electron-Rich Olefins and an Isostructural Boron Compound - Olefins of Exceptionally Low First Ionisation Potential. *J. Chem. Soc. D-Chem Commun.* **1971**, 1370.
- (166) Lappert, M. F.; Pedley, J. B.; Simpson, J.; Spalding, T. R. Bonding Studies of Compounds of Boron and Group-IV Elements .6. Mass Spectrometric Studies on Compounds Me_4M and $\text{Me}_3\text{M-M}'\text{Me}_3$ (M and M' = C, Si, Ge, Sn, and Pb) - Thermochemical Data. *J. Organomet. Chem.* **1971**, 29, 195.

- (167) Jenkins, A. D.; Lappert, M. F.; Srivastava, R. C. Initiation of Polymerization by Organometallic Compounds .2. Polymerization of Acrylonitrile with Titanium Tetradimethylamide and Related Reactions. *Eur. Polym. J.* **1971**, *7*, 289--.
- (168) Druce, P. M.; Lappert, M. F. Boron Halides as Reagents in Inorganic Syntheses .2. Further General Method for Preparation of Anhydrous Bromides and Iodides - Halogen Exchange Reactions. *J. Chem. Soc. A -Inorg Phys. Theor.* **1971**, 3595.
- (169) Cetinkaya, B.; Lappert, M. F.; McMeeking, J. Transition-Metal Complexes with $(CF_3)_2C=N-$ As Ligand, and a Tautomeric Hydrogen Transfer from Metal to Ligand. *J. Chem. Soc. D-Chem Commun.* **1971**, 215.
- (170) Krishnamurthy, S. S.; Lappert, M. F. Donor-Acceptor Complexes of Mixed Boron Trihalides. *Inorg. Nucl. Chem. Lett.* **1971**, *7*, 919.
- (171) Lappert, M. F.; Litzow, M. R.; Pedley, J. B.; Spalding, T. R.; Nöth, H. Bonding Studies of Compounds of Boron and Group IV Elements .4. Redistribution Equilibria among Boron Trihalides by B-11 Nuclear Resonance. *J. Chem. Soc. A -Inorg. Phys. Theor.* **1971**, 383.
- (172) Cardin, D. J.; Keppie, S. A.; Lappert, M. F.; Litzow, M. R.; Spalding, T. R. Binuclear Organometallic Compounds .3. Metal-Metal Bond Dissociation Energies, Raman, and Infrared Spectra for the Series $(\pi-C_5H_5)(CO)_3M^1M^2Me_3$ - ($M^1 = Cr, Mo, \text{ or } W$; $M^2 = Ge \text{ or } Sn$). *J. Chem. Soc. A -Inorg. Phys. Theor.* **1971**, 2262.
- (173) Green, M. C.; Lappert, M. F.; Pedley, J. B.; Schmidt, W.; Wilkins, B. T. Photoelectron Spectra and Energy Level Trends in Me_nSiCl_{4-n} and Related Series. *J. Organomet. Chem.* **1971**, *31* (3), C55.
- (174) Lappert, M. F.; Sanger, A. R. Amido-Derivatives of Metals and Metalloids .14. Reactions of Titanium(III) Dimethylamides with Protic or Unsaturated Reagents, or with Metal Hydrides. *J. Chem. Soc. A -Inorg. Phys. Theor.* **1971**, 1314.
- (175) Lappert, M. F.; Sanger, A. R. Amido-derivatives of Metals and Metalloids .13. Dialkylamides of Low-valent Titanium - Their Preparation and Properties. *J. Chem. Soc. A -Inorg. Phys. Theor.* **1971**, 874.
- (176) Collier, M. R.; Lappert, M. F.; McMeeking, J. Azomethine Derivatives of Early Transition Metals. *Inorg. Nucl. Chem. Lett.* **1971**, *7*, 689.
- (177) Cardin, D. J.; Cetinkaya, B.; Lappert, M. F.; Manojlovic-Muir, Lj.; Muir, K. W. An Electron-Rich Olefin as a Source of Co-ordinated Carbene - Synthesis of *trans*- $PtCl_2[C(NPhCH_2)_2]PEt_3$. *J. Chem. Soc. D-Chem. Commun.* **1971**, 400.
- (178) Lappert, M. F.; Poland, J. S. Organometallic Diazoalkanes .2. Heterocyclic Syntheses with the Co-ordinated Ligand CN_2^{2-} - Reactions of Trimethylstannyl-diazoalkanes and Trimethylsilyl-diazoalkanes. *J. Chem. Soc. C-Organic* **1971**, 3910.

- (179) Bird, S. R. A.; Donaldson, J. D.; Keppie, S. A.; Lappert, M. F. Mössbauer Spectra of some Organotin Compounds of Type R_3SnX . *J. Chem. Soc. A –Inorg. Phys. Theor.* **1971**, 1311.
- (180) Keppie, S. A.; Lappert, M. F. Binuclear Organometallic Compounds .5. Insertion into M-C and H-C Bonds of Co-ordinatively Unsaturated Transition-Metal Fragments - Synthesis of Group-VIA Metal Cyclopentadienyltricarbonylmetallates (Germanium and Tin) and Hydrides. *J. Chem. Soc. A –Inorg. Phys. Theor.* **1971**, 3216.
- (181) Lappert, M. F.; Litzow, M. R.; Pedley, J. B.; Tweedale, A. Bonding Studies of Compounds of Boron and Group-IV Elements .5. Boron-11 Nuclear Magnetic Resonance Data for Boron Trihalides and Mixed Trihalides. *J. Chem. Soc. A –Inorg. Phys. Theor.* **1971**, 2426.
- (182) Collier, M. R.; Wade, K.; Snaith, R.; Lappert, M. F. Monomeric Di-*t*-butylmethyleneaminoboranes. *J. Chem. Soc. Dalton Trans.* **1972**, 370.
- (183) Cetinkaya, B.; Palmer, D.; Lappert, M. F.; McMeeking, J. Reactions of Trialkyltin Acetylides with some Low Oxidation State Transition-Metal Complexes - Oxidative Addition, Oxidative Cleavage, and Alkynylation. *J. Organomet. Chem.* **1972**, 34 (2), C37.
- (184) Kingston, B. M.; Lappert, M. F. Binuclear Organometallic Compounds .6. Complexes containing Metal-Metal Bonds between Elements of Group IVA and Group IVb. *J. Chem. Soc. Dalton Trans.* **1972**, 69.
- (185) Jones, P. F.; Lappert, M. F. Wittig-Type Reactions of 2-Lithio-2-trimethylsilyl-1,3-dithian – An Improved and Extended Synthesis of Alkylidenedithians for 1-Carbon Homologation. *J. Chem. Soc. Chem. Commun.* **1972**, 526.
- (186) King, G. H.; Krishnamurthy, S. S.; Lappert, M. F.; Pedley, J. B. Bonding Studies of Compounds of Boron and Group 4 Elements .9. Photoelectron Spectra and Bonding Studies of Halogeno-boranes, Dimethylamino-boranes, and Methyl-boranes, BX_3 and BX_2Y . *Faraday Discuss.* **1972**, 54, 70–83.
- (187) Cundy, C. S.; Lappert, M. F. 2,2-Dimethyl-1,1,1,1-tetracarbonyl-1-ferro-2-silacyclopentane - Insertion of $[Fe(CO)_4]$ into a Strained Organosilicon Ring. *J. Chem. Soc. Chem. Commun.* **1972**, 445.
- (188) Cetinkaya, B.; Turner, K.; Lappert, M. F. Three-fragment Oxidative Addition of Chloroform-iminium or Chloroform-amidinium Chlorides to Rh^I or Pt^{II} Substrates - Complexes of the Secondary Carbene $CHNMe_2$. *J. Chem. Soc. Chem. Commun.* **1972**, 851.
- (189) Baldwin, J. C.; Lappert, M. F.; Pedley, J. B.; Poland, J. S. Bonding Studies of Compounds of Boron and Group IV Elements .8. Heats of Hydrolysis and Bond Energies for some Trimethylmetallyl Derivatives Me_3M-X ($M = Si, Ge, \text{ and } Sn$). *J. Chem. Soc. Dalton Trans.* **1972**, 1943.

- (190) Druce, P. M.; Lappert, M. F.; Riley, P. N. K. Boron Halides as Reagents in Inorganic Syntheses .3. Preparation and Characterization of Halogen-bridged and Pseudohalogen-bridged, Binuclear, Cationic Complexes of Platinum(II). *J. Chem. Soc. Dalton Trans.* **1972**, 438.
- (191) Collier, M. R.; Manojlov.L; Eaborn, C.; Truelock, M. M.; Jovanovic, B.; Lappert, M. F.; Muir, K. W. The *trans*-Influence of the Ligand Trimethylsilylmethylide (Me₃SiCH₂-) in Platinum(II) Complexes and Crystal-Structure of a Platinum(II) Alkyl. *J. Chem. Soc. Chem.Comm.* **1972**, 613.
- (192) Lappert, M. F.; Oliver, A. J. Three-fragment Oxidative Addition-Reaction as a Route to Transition-Metal Carbene Complexes - Imidoyl Halides and Rhodium(I) Compounds as Precursors for Rhodium(III) Carbenes. *J. Chem. Soc. Chem. Commun.* **1972**, 274.
- (193) Cardin, D. J.; Cetinkaya. B; Lappert, M. F. Transition Metal-Carbene Complexes. *Chem. Rev.* **1972**, 72 (5), 545.
- (194) Lappert, M. F.; Takahashi.S. Ziegler-Type Systems as Catalysts for Hydrosilylation - Linear Dimerization with Terminal Acetylenes. *J. Chem. Soc. Chem. Commun.* **1972**, 1272.
- (195) Cardin, D. J.; Cetinkaya, E.; Cetinkaya, B.; Lappert, M. F.; Manojlov.Lj; Muir, K. W. *trans/cis*-Isomerism and Isomerization of Pd^{II} And Pt^{II} Carbene Complexes - Crystal and Molecular Structures of *cis*-PtCl₂[C(NPhCH₂)₂]-PEt₃ and *trans*-PtCl₂C(NPhCH₂)₂]-PEt₃. *J. Organomet. Chem.* **1972**, 44 (2), C59.
- (196) Bush, M. A.; Lappert, M. F.; Druce, P. M. Boron Halides as Reagents in Inorganic Syntheses .4. Preparation of Tris- μ -Chloro-hexabromo-*triangulo*-trirhenium(III) (3Re-Re) and Re₃Cl₉ - Halogen Exchange-Reactions with Re₃Cl₉ and Crystal-Structure of a Sublimation Product of Tris- μ -chloro-hexabromo-*triangulo*-trirhenium(III) *J. Chem. Soc. Dalton Trans.* **1972**, 500.
- (197) Cundy, C. S.; Eaborn, C.; Lappert, M. F. Role of Transition-Metal in Homogeneous Catalytic Polymerization of Strained Organosilicon Heterocycles. *J. Organomet. Chem.* **1972**, 291.
- (198) Cardin, D. J.; Doyle, M. J.; Lappert, M. F. Rhodium(I)-Catalyzed Dismutation of Electron-Rich Olefins - Rhodium(I) Carbene Complexes as Intermediates. *J. Chem. Soc. Chem. Commun.* **1972**, 927.
- (199) Davidson, P. J.; Hudson, A.; Lappert, M. F.; Lednor, P. W. Tris[bis(trimethylsilyl)methyl]tin(III), R₃Sn – An Unusually Stable Stannyl Radical, from Photolysis of R₂Sn. *J. Chem. Soc. Chem. Commun.* **1973**, 829–830.
- (200) Harris, D. H.; Keppie, S. A.; Lappert, M. F. Binuclear Organometallic Compounds .7. Trimethylstannyl Complexes of Tantalum(V), Molybdenum(IV), and Tungsten(IV). *J. Chem. Soc. Dalton Trans.* **1973**, 1653–1658.

- (201) Lappert, M. F.; Pearce, R. Stable Silylmethyl and Neopentyl Complexes of Scandium(III) And Yttrium(III). *J. Chem. Soc. Chem. Commun.* **1973**, 126.
- (202) Cetinkaya, B.; Cetinkaya, E.; Lappert, M. F. Carbene Complexes .2. Thermally-Induced Isomerizations of Trans-Platinum(II) And Palladium(II) Complexes and Chemistry of *cis*- and *trans*-Isomers. *J. Chem. Soc. Dalton Trans.* **1973**, 906–912.
- (203) Collier, M. R.; Lappert, M. F.; Pearce, R. Silylmethyl and Related Complexes.1. Kinetically Stable Alkyls of Titanium(IV), Zirconium(IV), and Hafnium(IV). *J. Chem. Soc. Dalton Trans.* **1973**, 445–451.
- (204) Jarvis, J. A. J.; Kilbourn, B. T.; Pearce, R.; Lappert, M. F. Crystal-Structure (at -40°) of Tetrakis[trimethylsilylmethylcopper(I)], An Alkyl Bridged, Square-Planar, Tetranuclear Copper(I) Cluster. *J. Chem. Soc. Chem. Commun.* **1973**, 475–476.
- (205) Cardin, D. J.; Lappert, M. F.; Lednor, P. W. Free-Radical Displacement Reactions at a Transition-Metal Center - Bimolecular Homolytic Substitution (S_H2) at Square-Planar Pt^{II} . *J. Chem. Soc. Chem. Commun.* **1973**, 350.
- (206) Lappert, M. F. Correction. *J. Chem. Soc. Chem. Commun.* **1973**, 148.
- (207) Cundy, C. S.; Lappert, M. F. 1-[(π -Cyclopentadienyl)dicarbonyliron]-1-Methylsilacyclobutane and Related Iron-Substituted Silacyclobutanes. *J. Organomet. Chem.* **1973**, 57 (2), C72--C74.
- (208) Cetinkaya, B.; Lappert, M. F.; McMeeking, J. Alkylideneamido-Derivatives of Metals and Metalloids .5. Complexes of Late Transition-Metals with $(CF_3)_2C:N-$ As Ligand, and a Tautomeric Hydrogen Transfer from Metal to Ligand. *J. Chem. Soc. Dalton Trans.* **1973**, 1975–1982.
- (209) Cardin, C. J.; Cardin, D. J.; Lappert, M. F.; Muir, K. W. Synthesis, Structure, and Reactions of Some Simple Unsaturated σ -Hydrocarbylplatinum(II) Complexes. *J. Organomet. Chem.* **1973**, 60 (2), C70--C73.
- (210) Davidson, P. J.; Lappert, M. F. Stabilization of Metals in a Low Coordinative Environment Using the Bis(trimethylsilyl)methyl Ligand - Colored Sn^{II} and Pb^{II} Alkyls, $M[CH(SiMe_3)_2]_2$. *J. Chem. Soc. Chem. Commun.* **1973**, 317.
- (211) Cetinkaya, B.; Dixneuf, P.; Lappert, M. F. General Synthesis of Transition-Metal Carbene Complexes – Cr^0 , Fe^0 , Ir^I , Ni^{II} , Pd^{II} , Pt^{II} , and Au^I Mono-Carbene and Oligo-Carbene Species from Electron-Rich Olefins. *J. Chem. Soc. Chem. Commun.* **1973**, 206.
- (212) Cardin, D. J.; Cetinkaya, B.; Cetinkaya, E.; Lappert, M. F. Carbene Complexes .1. Electron-Rich Olefins as a Source of Carbene Complexes of Platinum(II) and Palladium(II) - Some Experiments with $(CF_3)_2CN_2$. *J. Chem. Soc. Dalton Trans.* **1973**, 514–522.
- (213) Cundy, C. S.; Lappert, M. F.; Pearce, R. Silylmethyl and Related Complexes .3. Reaction of (Trimethylsilyl)methyl, (Dimethylsilyl)-methyl or Neopentyl Alkylating

- Reagents with Chlorotris(triphenylphosphine)Rhodium(I) - Steric Acceleration to Decomposition of Presumed Transition-Metal Alkyl Intermediates. *J. Organomet. Chem.* **1973**, *59*, 161–166.
- (214) Cetinkaya, B.; Lappert, M. F.; McMeeking, J.; Palmer, D. E. Unsaturated α -Hydrocarbonyl Transition-Metal Complexes .1. Trimethyltin Acetylides as Sources of Late Transition-Metal Derivatives - Metathesis, Oxidative Addition, and Oxidative Cleavage. *J. Chem. Soc. Dalton Trans.* **1973**, 1202–1208.
- (215) Cardin, D. J.; Cetinkaya, B.; Doyle, M. J.; Lappert, M. F. Chemistry of Transition-Metal Carbene Complexes and their Role as Reaction Intermediates. *Chem. Soc. Rev.* **1973**, *2* (1), 99–144.
- (216) Jones, P. F.; Lappert, M. F.; Szary, A. C. Wittig-Type Reactions of 2-Lithio-2-Trimethylsilyl-1,3-dithian and Related Reactions. *J. Chem. Soc. Perkin Trans. 1* **1973**, 2272–2277.
- (217) Lappert, M. F.; Lednor, P. W. Free-Radicals as Intermediates in Oxidative Addition of Alkyl-Halides to Platinum(0). *J. Chem. Soc. Chem. Commun.* **1973**, 948–949.
- (218) Cundy, C. S.; Lappert, M. F.; Pedley, J. B.; Schmidt, W.; Wilkins, B. T. Bonding Studies of Compounds of Boron and Group IV Elements .11. Photo Electron Spectra of Strained Cyclic Organosilicon Compounds. *J. Organomet. Chem.* **1973**, *51*, 99–104.
- (219) Cardin, D. J.; Cetinkaya, B.; Cetinkaya, E.; Lappert, M. F.; Randall, E. W.; Rosenberg, E. Carbene Complexes .3. Carbon-13 Nuclear Magnetic-Resonance Studies of Carbene Complexes of 1,3-Diorganoimidazolidin-2-ylidenes. *J. Chem. Soc. Dalton Trans.* **1973**, 1982–1985.
- (220) Lappert, M. F.; McMeeking, J.; Palmer, D. E. Alkylideneamido-Derivatives of Metals and Metalloids .3. Chemistry of Alkylideneamido(trimethyl)stannanes. *J. Chem. Soc. Dalton Trans.* **1973**, 151–156.
- (221) Davidson, P. J.; Lappert, M. F.; Pearce, R. Silylmethyl and Related Complexes .2. Preparation, Spectra, and Thermolysis of Tetraneopentyls of Titanium, Zirconium, and Hafnium. *J. Organomet. Chem.* **1973**, *57*, 269–277.
- (222) Boschi, R.; Lappert, M. F.; Pedley, J. B.; Schmidt, W.; Wilkins, B. T. Bonding Studies of Compounds of Boron and Group 4 Elements .10. Photoelectron Spectra of Compounds Me_4M ($\text{M} = \text{C}, \text{Si}, \text{Ge}, \text{Sn}, \text{or Pb}$) and Lack of Participation of M d-Orbitals. *J. Organomet. Chem.* **1973**, *50*, 69–73.
- (223) Lappert, M. F.; Palmer, D. E. Alkylideneamido-Derivatives of Metals and Metalloids .4. 1,1-Bis(trifluoromethyl)methyleneamido- Complexes of Group IVb Metals. *J. Chem. Soc. Dalton Trans.* **1973**, 157–158.
- (224) Lappert, M. F.; Pearce, R. Trimethylsilylmethylcopper – A Stable Copper(I) Alkyl. *J. Chem. Soc. Chem. Commun.* **1973**, 24–25.

- (225) Barker, G. K.; Lappert, M. F. Stabilization of Transition-Metals in a Low Coordinative Environment using the Bis(trimethylsilyl)methyl Ligand - Monomeric Cr^{III} Alkyl, Cr[CH(SiMe₃)₂]₃, and Related Complexes. *J. Organomet. Chem.* **1974**, 76, C45--C46.
- (226) Hudson, A.; Lappert, M. F.; Lednor, P. W.; Nicholson, B. K. Homolysis of Metal-Carbon and Metal-Metal Bonds : Spin-Trapping of Resulting Carbon-centered and Metal-centered Radicals. *J. Chem. Soc. Chem. Commun.* **1974**, 966–967.
- (227) Cardin, D. J.; Cetinkaya, B.; Lappert, M. F. Carbene Complexes .4. Far Infrared and P-31 NMR-Spectra of Palladium and Platinum Carbene Complexes. *J. Organomet. Chem.* **1974**, 72, 139–143.
- (228) Cetinkaya, B.; Lappert, M. F.; Mclaughlin, G. M.; Turner, K. Carbene Complexes .7. Chloromethyleneammonium Chlorides - Electron-Rich Carbenoids as Precursors to Secondary Carbene Metal-Complexes - Crystal and Molecular-Structure of Trichloro(dimethylaminomethylene)bis(triethylphosphine)rhodium(III). *J. Chem. Soc. Dalton Trans.* **1974**, 1591–1599.
- (229) Lappert, M. F.; Nile, T. A.; Takahash, S. Homogeneous Catalysis .2. Ziegler Systems as Catalysts for Hydrosilylation. *J. Organomet. Chem.* **1974**, 72, 425–439.
- (230) Cotton, J. D.; Cundy, C. S.; Harris, D. H.; Hudson, A.; Lappert, M. F.; Lednor, P. W. Photochemical Synthesis and Electron-Spin Resonance Characterization of Stable Trivalent Metal Alkyls (Si, Ge, Sn) and Amides (Ge and Sn) of Group IV Elements. *J. Chem. Soc. Chem. Commun.* **1974**, 651–652.
- (231) Cetinkaya, E.; Johnson, A. W.; Lappert, M. F.; Mclaughlin, G. M.; Muir, K. W. Synthesis, Properties, and Crystal-Structure of Octaethylporphinbis[*cis*-dicarbonyldichlororhodate(I)] [oepH₄]²⁺2[RhCl₂(CO)₂]-and some New Reactions of Co(oep) Derivatives. *J. Chem. Soc. Dalton Trans.* **1974**, 1236–1243.
- (232) Hitchcock, P. B.; Lappert, M. F.; Mclaughlin, G. M.; Oliver, A. J. Carbene Complexes .6. Complexes from Imidoyl Chloride and Rhodium(I) Precursors, and Crystal and Molecular-Structure of Carbonyltri-iodo-[α -(N-Methyl- α -methyliminobenzylamino)benzylidene-*N,C*]rhodium, I₃(OC)Rh-CPh(NMe)CPh-NMe. *J. Chem. Soc. Dalton Trans.* **1974**, 68–74.
- (233) Cotton, J. D.; Davison, P. J.; Goldberg, D. E.; Lappert, M. F.; Thomas, K. M. Coordination Chemistry of Heavy-Atom Group-IV Donors, and Crystal and Molecular-Structure of [(Me₃Si)₂CH]₂SnCr(CO)₅. *J. Chem. Soc. Commun.* **1974**, 893–895.
- (234) Doyle, M. J.; Lappert, M. F.; Mclaughlin, G. M.; McMeeking, J. Alkylideneamido-Derivatives of Metals and Metalloids .6. Synthesis of Alkylideneamido(carbene)rhodium(I) Complexes and Related Chemistry - Crystal and Molecular-Structure of *trans*-Rh[N:C(CF₃)₂][C(NMeCH₂)₂](PPh₃)₂. *J. Chem. Soc. Dalton Trans.* **1974**, 1494–1501.

- (235) Lappert, M. F.; Oliver, A. J. Carbene Complexes .5. Imidoyl Chlorides as Synthetic Reagents, and Preparation of Rhodium(III) Carbene Complexes from Rhodium(I) Precursors. *J. Chem. Soc. Dalton Trans.* **1974**, 65–68.
- (236) Cetinkaya, B.; Dixneuf, P.; Lappert, M. F. Carbene Complexes .8. Chromium(0), Iron(0), Rhodium(I), Iridium(I), Nickel(II), Palladium(II), Platinum(II), and Gold(I) Mono-carbene and Oligo-carbene Species from Electron-Rich Olefins. *J. Chem. Soc. Dalton Trans.* **1974**, 1827–1833.
- (237) Harris, D. H.; Lappert, M. F. Monomeric, Volatile Bivalent Amides of Group-IVb Elements, $M(NR^1)_2$ and $M(NR^1R^2)_2$ ($M = Ge, Sn, \text{ or } Pb, R^1 = Me_3Si, R^2 = Me_3C$). *J. Chem. Soc. Chem. Commun.* **1974**, 895–896.
- (238) Cardin, D. J.; Joblin, K. N.; Johnson, A. W.; Lang, G.; Lappert, M. F. Coenzyme B₁₂-Dependent Enzyme Reactions .1. Emission Mössbauer Spectroscopic Study of Ethanolamine-Ammonia Lyase A Coenzyme B₁₂-Dependent Enzyme. *Biochim. Biophys. Acta* **1974**, 371 (1), 44–51.
- (239) Lappert, M. F.; Pedley, J. B.; Sharp, G. J.; Westwood, N. P. Bonding Studies of Compounds of Boron and Group III and IV Elements .12. Variable Temperature He-I Photoelectron Spectra of Group III Halides, $2MX_3 = M_2X_6$ ($M = Al \text{ or } Ga; X = Cl, Br, \text{ or } I$). *J. Electron Spectros. Relat. Phenomena* **1974**, 3 (3), 237–239.
- (240) Cardin, D. J.; Doyle, M. J.; Lappert, M. F. Steric Effects in Substitution-Reactions and Isomerizations in Square-Planar Carbene and Dicarbene Complexes of Rhodium(I). *J. Organomet. Chem.* **1974**, 65 (1), C13--C16.
- (241) Doyle, M. J.; Lappert, M. F. Activation Parameters for Rotation about an M-C_{carb} Bond from Temperature-Dependent H-1 NMR-Spectra of Rh^I Carbene Complexes. *J. Chem. Soc. Chem. Commun.* **1974**, 679–680.
- (242) Lappert, M. F.; Pedley, J. B.; Sharp, G. J. Bonding Studies of Transition Metal Complexes .1. He(I) Photoelectron-Spectra of d⁰ Silylmethyl and Neopentyl Derivatives of Group IVa Metals. *J. Organomet. Chem.* **1974**, 66 (2), 271–278.
- (243) Lappert, M. F.; Speier, G. Binuclear Organometallic Compounds .8. Oxidative Addition of Si-H or Si-Cl Compounds to Low Valent Fe, Co, or Ni Complexes stabilized by Mono-dentate or Bi-dentate Phosphines. *J. Organomet. Chem.* **1974**, 80, 329–339.
- (244) Davidson, P. J.; Lappert, M. F.; Pearce, R. Stable Homoleptic Metal Alkyls. *Acc. Chem. Res.* **1974**, 7, 209–217.
- (245) Lappert, M. F.; Pedley, J. B.; Wilkins, B. T.; Stelzer, O.; Unger, E. Bonding Studies of Compounds of Boron and Group 3-5 Elements .13. He(I) Photoelectron-Spectra of Phosphines R_nPX_{3-n} ($R = Me \text{ or } Bu^t, X = H, Cl, \text{ or } F, n = 1-3$), $(Me_2N)NPCl_{3-n}$ ($n = 1-3$), and $(R_2N)PF_2$ ($R = Me \text{ or } Et$). *J. Chem. Soc. Dalton Trans.* **1975**, 1207–1214.
- (246) Barker, G. K.; Lappert, M. F.; Pedley, J. B.; Sharp, G. J.; Westwood, N. P. C. Bonding Studies of Boron and Group-3-5 Elements .15. He(I) Photoelectron-Spectra of

- Monomeric Group-3 Trihalide, Trimethyl, and Mixed Halogenomethyl Species. *J. Chem. Soc. Dalton Trans.* **1975**, 1765–1771.
- (247) Hartshorn, A. J.; Lappert, M. F.; Turner, K. Transition-Metal Chemistry of Dichloromethylene(dimethyl)ammonium Chloride - C-chlorocarbene Complexes. *J. Chem. Soc. Chem. Commun.* **1975**, 929–930.
- (248) Joblin, K. N.; Johnson, A. W.; Lappert, M. F.; Hollaway, M. R.; White, H. A. Coenzyme-B₁₂-Dependent Enzyme Reactions - Spectrophotometric Rapid Kinetic Study of Ethanolamine Ammonia-Lyase. *FEBS Lett.* **1975**, 53 (2), 193–198.
- (249) Krishnamurthy, S. S.; Lappert, M. F.; Pedley, J. B. Bonding Studies of Compounds of Boron and Group 3-5 Elements 14. Redistribution Equilibria in Phenylboron Dihalide and Boron Trihalide Systems. *J. Chem. Soc. Dalton Trans.* **1975**, 1214–1216.
- (250) Gibbins, S. G.; Lappert, M. F.; Pedley, J. B.; Sharp, G. J. Bonding Studies of Transition-Metal Complexes .2. Helium-(I) Photoelectron-Spectra of Homoleptic d⁰, d¹, and d¹⁰ Tetrakis(dialkylamides) of Transition and Group 4b Metals and Tungsten Hexakis(dimethylamide). *J. Chem. Soc. Dalton Trans.* **1975**, 72–76.
- (251) Hudson, A.; Lappert, M. F.; Nicholson, B. K. Reassignment to a Manganese(II) Species of an ESR-Spectrum attributed to Mn(CO)₅. *J. Organomet. Chem.* **1975**, 92, C11--C14.
- (252) Lappert, M. F. Coordination Chemistry of Bivalent Group 4 Donors - Nucleophilic-Carbene and Dialkylstannylene Complexes. *J. Organomet. Chem.* **1975**, 100, 139–159.
- (253) Kroto, H. W.; Lappert, M. F.; Maier, M.; Pedley, J. B.; Vidal, M.; Guest, M. F. He(I) Photoelectron-Spectra of Mixed Boron Trihalides and Microwave-Spectrum of BCIF₂. *J. Chem. Soc. Chem. Commun.* **1975**, 810–812.
- (254) Joblin, K. N.; Johnson, A. W.; Lappert, M. F.; Nicholson, B. K. Light-Induced Anaerobic Co^{III}-C Homolysis of Aqueous Vitamin-B₁₂ Coenzyme or of Ethylcobalamin - Spin-Trapping of the 5'-Deoxyadenosyl or Et Radical. *J. Chem. Soc. Chem. Commun.* **1975**, 441–442.
- (255) Harris, D. H.; Lappert, M. F.; Poland, J. S.; Mcfarlane, W. Binuclear Organometallic Compounds .9. Nuclear Magnetic Double-Resonance Studies of Tin-119 Chemical-Shifts in Compounds with Transition Metal-to-Tin Bonds. *J. Chem. Soc. Dalton Trans.* **1975**, 311–316.
- (256) Lappert, M. F.; Patil, D. S.; Pedley, J. B. Standard Heats of Formation and M-C Bond-Energy Terms for Some Homoleptic Transition-Metal Alkyls MR_n. *J. Chem. Soc. Chem. Commun.* **1975**, 830–831.
- (257) Lappert, M. F. Inorganic Chemistry .2. - Introduction. *Annu. Reports Prog. Chem. Sect. A-Physical Inorg. Chem.* **1975**, 72, 91–92.

- (258) Lappert, M. F.; Nile, T. A., Homogeneous Catalysis .3. Hydrosilylation of $\alpha\beta$ -Unsaturated Aldehydes : Regiospecific Reduction of C=O Using Ni⁰ Catalysts. *J. Organomet. Chem.* **1975**, 102 (4), 543–550.
- (259) Graffeuil, M.; Labarre, J. F.; Lappert, M. F.; Leibovici, C.; Stelzer, O. Basicity in Gas-Phase of Phosphines - Quantum Calculations versus Experimental-Data. *J. Chim. Phys. Physico-Chimie Biol.* **1975**, 72 (6), 799–802.
- (260) Cetinkaya, B.; Hitchcock, P. B.; Lappert, M. F.; Pye, P. L. Electron-Rich Olefins as Heteroatom Donors - Crystal and Molecular-Structures of μ -Dimethylthioethene-1,1-dithiolato-S,S,'S,'S''-bis[chloro(triethylphosphine)-platinum(II)] and Tetracarbonyl-NN'N''N'''-Tetramethylbi(imidazolidin-2-ylidene)-NN''-Chromium(0). *J. Chem. Soc. Chem. Commun.* **1975**, 683–684.
- (261) Lappert, M.; Power, P. Di- and Tri-valent Trimethylsilyl-substituted Tin Amides and Related Compounds such as Sn[N(SiMe₃)₂]₂ or ₃. *Adv. Chem. Ser.* **1976**, 157, 70.
- (261a) Lappert, M. F., Lednor P. W. Free Radicals in Organometallic Chemistry *Advances in Organometallic Chemistry* **1976**, 14, 345-399
- (262) Harris, D. H.; Lappert, M. Metal and Metalloid Dialkylamides containing the Bis(trimethylsilyl)amido or t-Butyl(trimethylsilyl)amido Ligands. *J. Organometal Chem. Libr. 2* **1976**, 13.
- (263) Hudson, A.; Lappert, M. F.; Lednor, P. W. Sub-valent Group-4b Metal Alkyls and Amides .4. Electron-Spin Resonance Study of some Long-lived Photochemically Synthesized Trisubstituted Silyl, Germyl, and Stannyl Radicals. *J. Chem. Soc. Dalton Trans.* **1976**, 2369–2375.
- (264) Lappert, M. F.; Pedley, J. B.; Sharp, G. J.; Bradley, D. C. Bonding Studies of Transition-Metal Complexes .3. He(I) Photoelectron-Spectra of 3-co-ordinate Homoleptic Bis(trimethylsilyl)amides of Scandium, Titanium, Chromium, Iron, Gallium, and Indium. *J. Chem. Soc. Dalton Trans.* **1976**, 1737–1740.
- (265) Lappert, M. F. Di-valent and Tri-valent Trimethylsilyl-substituted Tin Alkyls and Dialkyl-amides, Sn[CH(SiMe₃)₂]₂ or ₃ and Sn[N(SiMe₃)₂]₂ or ₃. *Abstr. Pap. Am. Chem. Soc.* **1976**, No. I, 56.
- (266) Lappert, M. F. Use of the Bulky Alkyl Ligand (Me₃Si)₂CH⁻ to Stabilize Unusual Low Valent Transition Metal Alkyls and Dialkylstannylene Derivatives. *Adv. Chem. Ser.* **1976**, 150, 256–265.
- (267) Hudson, A.; Lappert, M. F.; MacQuitty, J. J.; Nicholson, B. K.; Zainal, H.; Luckhurst, G. R.; Zannoni, C.; Bratt, S. W.; Symons, M. C. R. Definitive Evidence that the ESR-Spectrum Observed during Photolysis of Mn₂(CO)₁₀ in THF is due to Octahedral High-Spin (d⁵) Manganese(II). *J. Organomet. Chem.* **1976**, 110, C5--C8.
- (268) Davidson, P. J.; Harris, D. H.; Lappert, M. F. Sub-Valent Group 4b Metal Alkyls and Amides .1. Synthesis and Physical Properties of Kinetically Stable

- Bis[bis(trimethylsilyl)methyl]germanium(II), Bis[bis(trimethylsilyl)methyl]tin(II), and Bis[bis(trimethylsilyl)methyl]lead(II). *J. Chem. Soc. Dalton Trans.* **1976**, 2268–2274.
- (269) Cotton, J. D.; Davidson, P. J.; Lappert, M. F. Subvalent Group 4b Metal Alkyls and Amides .2. Chemistry and Properties of Bis[bis(trimethylsilyl)methyl]tin(II) and its Lead Analogue. *J. Chem. Soc. Dalton Trans.* **1976**, 2275–2286.
- (270) Joblin, K. N.; Johnson, A. W.; Lappert, M. F.; Wallis, O. C. Coenzyme B₁₂-dependent Reactions .4. Observations on Purification of Ethanolamine Ammonia-Lyase. *Biochim. Biophys. Acta* **1976**, 452, 262–270.
- (271) Lappert, M. F.; Pedley, J. B.; Sharp, G. J.; Guest, M. F. Bonding Studies of Compounds of Boron and Elements of Groups 3-5 .16. *Ab-Initio* SCFMO Calculations and He(I) Photoelectron-Spectra of Halogen-Bridged Dimeric Group-3 Metal Halides and Methylmetal Halides. *J. Chem. Soc. Faraday Trans. II* **1976**, 72, 539–551.
- (272) Hartshorn, A. J.; Lappert, M. F. Role of C-Chlorocarbenemetal Complexes in Carbene-Metal and Carbyne-Metal Complex Chemistry - Experiments with [Cr(CO)₅[C(Cl)NMe₂]] and [Cr(CO)₅(≡CNMe₂)]. *J. Chem. Soc. Chem. Commun.* **1976**, 761–762.
- (273) Davidson, P. J.; Lappert, M. F.; Pearce, R. Metal σ-Hydrocarbyls, MR_n Stoichiometry, Structures, Stabilities, and Thermal-Decomposition Pathways. *Chem. Rev.* **1976**, 76, 219–242.
- (274) Goldberg, D. E.; Harris, D. H.; Lappert, M. F.; Thomas, K. M. New Synthesis of Divalent Group 4b Alkyls M[CH(SiMe₃)₂]₂ (M = Ge or Sn), and Crystal and Molecular-Structure of Tin Compound. *J. Chem. Soc. Chem. Commun.* **1976**, 261–262.
- (275) Pannell, K. H.; Lappert, M. F.; Stanley, K. Organometalloidal Derivatives of Transition-Metals .3. σ-Silylallyl and π-Silylallyl Complexes. *J. Organomet. Chem.* **1976**, 112 (1), 37–48.
- (276) Gynane, M. J. S.; Hudson, A.; Lappert, M. F.; Power, P. P.; Goldwhite, H. Synthesis and Electron-Spin Resonance Study of Stable Dialkyls and Diamides of Phosphorus and Arsenic, R¹₂M. and (R²₂N)₂M. *J. Chem. Soc. Chem. Commun.* **1976**, 623–624.
- (277) Cotton, J. D.; Davidson, P. J.; Lappert, M. F.; Donaldson, J. D.; Silver, J. Sub-valent Group 4b Metal Alkyls and Amides .3. Mössbauer-Spectroscopy Studies of Bis[bis(trimethylsilyl)methyl]tin(II) and its Derivatives. *J. Chem. Soc. Dalton Trans.* **1976**, 2286–2290.
- (278) Cundy, C. S.; Lappert, M. F.; Dubac, J.; Mazerolles, P. Reactions of Strained Organosilicon Heterocycles with Nonacarbonyldi-Iron(0) .1. Reactivity and Mechanism. *J. Chem. Soc. Dalton Trans.* **1976**, 910–914.
- (279) Lappert, M. F. Low-valent Trimethylsilyl-substituted Alkyls and Amides of Silicon, Other Group-4a Elements, and Some Transition-Metals. *Abstr. Pap. Am. Chem. Soc.* **1976**, No. I, 3.

- (280) Holton, J.; Lappert, M. F.; Ballard, D. G. H.; Pearce, R.; Atwood, J. L.; Hunter, W. E. Dimeric μ -Dimethyl Lanthanide Complexes, a New Class of Electron-Deficient Compound, and Crystal and Molecular-Structure of $[\text{Yb}(\eta\text{-C}_5\text{H}_5)_2\text{Me}]_2$. *J. Chem. Soc. Chem. Commun.* **1976**, 480–481.
- (281) Gynane, M. J. S.; Lappert, M. F. New Synthesis of Metal-centered (e.g. Group 4 Element) Radicals from an Organometallic Halide and an Electron-Rich Olefin. *J. Organomet. Chem.* **1976**, 114, C4–C6.
- (282) Holton, J.; Lappert, M. F.; Scollary, G. R.; Ballard, D. G. H.; Pearce, R.; Atwood, J. L.; Hunter, W. E. μ -Dialkyl Inner Transition Metal (III) Tetraalkylaluminates - Crystal and Molecular-Structure of Di- μ -methyl-(dimethylaluminium)biscyclopentadienyl-yttrium and -ytterbium. *J. Chem. Soc. Chem. Commun.* **1976**, 425–426.
- (283) Lappert, M. F. Inorganic-Chemistry - Introduction. *Annu. Reports Prog. Chem. Sect. A-Physical Inorg. Chem.* **1976**, 73, 115–116.
- (284) Lappert, M. F. Aspects of Organometallic Free-Radical Chemistry. *Chimia (Aarau)*. **1976**, 30 (5), 273–274.
- (285) Harris, D. H.; Lappert, M. F.; Pedley, J. B.; Sharp, G. J. Bonding Studies of Compounds of Group-3-5 Elements .18. He(I) Photoelectron-Spectra of Bivalent Homoleptic Alkyls and Amides, especially of Group-4 Elements, and of Tin(II) Chloride and Bromide. *J. Chem. Soc. Dalton Trans.* **1976**, 945–950.
- (286) Hitchcock, P. B.; Lappert, M. F.; Pye, P. L. Synthesis, Properties, and X-Ray Crystal-Structure of *Trans*-Dichlorotetrakis-(1,3-Diethylimidazolidin-2-ylidene)ruthenium(II), A Neutral Tetracarbene-Metal Complex. *J. Chem. Soc. Chem. Commun.* **1976**, 644–646.
- (287) Cundy, C. S.; Lappert, M. F.; Spalding, T. R. Mass-Spectra of Sila-cyclobutane and Sila-cyclobutene Derivatives. *J. Chem. Soc. Dalton Trans.* **1976**, 558–562.
- (288) Gynane, M. J. S.; Lappert, M. F.; Miles, S. J.; Power, P. P. Ready Oxidative Addition of an Alkyl or Aryl Halide to a Tin(II) Alkyl or Amide - Evidence for a Free-Radical Pathway. *J. Chem. Soc. Chem. Commun.* **1976**, 256–257.
- (289) Hitchcock, P. B.; Lappert, M. F.; Pye, P. L. Spontaneous *N*-Aryl (rather than *P*-Aryl) Orthometallation in the System $[\text{RuCl}_2(\text{PPh}_3)_3]-[=\text{CN}(\text{Ar})(\text{CH}_2)_2\text{NAr}]_2$ (Ar = $\text{C}_6\text{H}_4\text{Me}-4$); X-Ray Crystal and Molecular-Structure of $[\text{RuCl}(\text{PEt}_3)_2(\text{CN}(\text{Ar})(\text{CH}_2)_2\text{N}(\text{C}_6\text{H}_3\text{Me}-4))]$, A Stereochemically Rigid 5-Coordinate Ru^{II} Complex with a short (2.2 Å) *J. Chem. Soc. Chem. Commun.* **1977**, 196–198.
- (290) Gynane, M. J. S.; Lappert, M. F.; Miles, S. J.; Carty, A. J.; Taylor, N. J. Subvalent Group-4b Metal Alkyls and Amides .6. Oxidative Addition of an Alkyl or Aryl Halide to Bis[bis(trimethylsilyl)methyl]tin(II) – H-1 Nuclear Magnetic-Resonance Data on the Tin(IV) Adducts and a Single-Crystal X-Ray Study of Tris[bis(trimethylsilyl)methyl]chlorotin(IV). *J. Chem. Soc. Dalton Trans.* **1977**, 2009–2015.

- (291) Cornish, A. J.; Lappert, M. F.; Nile, T. A. Homogeneous Catalysis .5. Hydrosilylation of Dienes with Octacarbonyldicobalt(0). *J. Organomet. Chem.* **1977**, *136*, 73–85.
- (292) Lappert, M. F. Correction. *J. Chem. Soc. Chem. Commun.* **1977**, 796.
- (293) Hudson, A.; Lappert, M. F.; Nicholson, B. K. Photolytic Homolysis of Metal-Metal Bonds of some Binuclear Transition-Metal Carbonyls – An Electron-Spin Resonance Investigation using Spin Trapping. *J. Chem. Soc. Dalton Trans.* **1977**, 551–554.
- (294) Gynane, M. J. S.; Lappert, M. F.; Riviere, P.; Rivierebaudet, M. Persistent Triarylgermyl Radicals GeAr_3 (Ar = 2,6-Me₂C₆H₃ or 2,4,6-Me₃C₆H₂) - Synthesis, ESR Studies, and Comparisons with Si and Sn Analogues. *J. Organomet. Chem.* **1977**, *142*, C9--C11.
- (295) Jarvis, J. A. J.; Pearce, R.; Lappert, M. F. Silylmethyl and Related Complexes .4. Preparation, Properties, and Crystal and Molecular-Structure of Tetrakis[(trimethylsilylmethyl)copper(I)], an Alkyl-bridged, Square-Planar, Tetranuclear Copper(I) Cluster. *J. Chem. Soc. Dalton Trans.* **1977**, 999–1003.
- (296) Lappert, M. F.; Miles, S. J.; Power, P. P.; Carty, A. J.; Taylor, N. J. Coordination Chemistry of Bivalent Group 4b Heavy-Metal Donors $\text{M}[\text{N}(\text{SiMe}_3)_2]_2$ (M = Ge or Pb) or $\text{Ge}[\text{CH}(\text{SiMe}_3)_2]_2$ - and Crystal and Molecular-Structure of $[\text{Cr}(\text{CO})_5(\text{Ge}[\text{CH}(\text{SiMe}_3)_2]_2)]$. *J. Chem. Soc. Chem. Commun.* **1977**, 458–459.
- (297) Cardin, C. J.; Cardin, D. J.; Lappert, M. F. Unsaturated σ -Hydrocarbyl Transition-Metal Complexes .2. Synthesis and Reactions of Vinylplatinum Complexes and a Comparison with Analogous Fluorovinyl and Alkynyl Complexes. *J. Chem. Soc. Dalton Trans.* **1977**, 767–779.
- (298) Cornish, A. J.; Lappert, M. F.; Nile, T. A. Homogeneous Catalysis .4. Hydrosilylation of Cyclic or Linear Dienes using Low-valent Nickel-Complexes and Related Experiments. *J. Organomet. Chem.* **1977**, *132*, 133–148.
- (299) Atwood, J. L.; Barker, G. K.; Holton, J.; Hunter, W. E.; Lappert, M. F.; Pearce, R. Silylmethyl and Related Complexes .5. Metallocene Bis(trimethylsilyl)methyls and Benzhydryls of Early Transition-Metals $[\text{M}(\eta^5\text{-C}_5\text{H}_5)_2\text{R}]$ (M = Ti or V) and $[\text{M}(\eta^5\text{-C}_5\text{H}_5)_2(\text{X})\text{R}]$ (M = Zr or Hf and X = Cl or R), and Crystal and Molecular Structures of $[\text{M}(\eta^5\text{-C}_5\text{H}_5)_2\text{CHPh}_2]_2$ (M = Zr or Hf) *J. Am. Chem. Soc.* **1977**, *99*, 6645–6652.
- (300) Lappert, M. F.; Pye, P. L. Carbene and Related Complexes of Molybdenum derived from Electron-rich Olefins. *J. Less Common Met.* **1977**, *54* (1), 191–207.
- (301) Lappert, M. F.; Pye, P. L. Carbene Complexes .12. Electron-rich Olefin-derived Neutral Mono-(Carbene) and Bis(carbene) Complexes of Low-oxidation-state Manganese, Iron, Cobalt, Nickel, and Ruthenium. *J. Chem. Soc. Dalton Trans.* **1977**, 2172–2180.
- (302) Lappert, M. F.; Macquitty, J. J.; Pye, P. L. Stable Paramagnetic Carbene-Metal Complexes - Syntheses and Properties of Low-Spin d^7 (1,3-Dimethylimidazolidin-2-ylidene)iron(I) Tetrafluoroborates. *J. Chem. Soc. Chem. Commun.* **1977**, 411–412.

- (303) Lappert, M. F.; Pye, P. L.; Mclaughlin, G. M. Carbene Complexes .9. Electron-rich Olefin-derived Carbene-Molybdenum(0) and Amidinium Molybdate(0) Complexes, and Crystal and Molecular-Structure of *cis*-Tetracarbonylbis(1,3-dimethylimidazolidin-2-ylidene)molybdenum(0), *cis*-[Mo(CO)₄(CN(Me)CH₂CH₂NMe)₂]. *J. Chem. Soc. Dalton Trans.* **1977**, 1272–1282.
- (304) Lappert, M. F. (Ed.) Inorganic Chemistry - Introduction. *Annu. Reports Prog. Chem. Sect. A-Physical Inorg. Chem.* **1976**, 74, 109–110.
- (305) Hitchcock, P. B.; Lappert, M. F.; Pye, P. L. Carbene Complexes .11. Steric and Conformational Effects upon Transition-Metal Reactivity of Electron-Rich Olefins and Derived Species - Heteroatom-Donor-Olefin-Metal (Cr⁰, Mo⁰, W⁰, or Rh^I) and 2-Imidazoline-*N*-Metal Complexes, and Crystal and Molecular Structure of TetracarbonylN,N',N'',N'''. *J. Chem. Soc. Dalton Trans.* **1977**, 2160–2172.
- (306) Lappert, M. F.; Pye, P. L. Carbene Complexes .10. Electron-Rich Olefin-Based Mono-Carbene-Tungsten(0), Bis-Carbene-Tungsten(0) and Tris-Carbene-Tungsten(0) Complexes and some Derived Six-coordinate and Seven-coordinate Mono- and Bis-carbenedihalogenotungsten(II) and Related Molybdenum(II) species. *J. Chem. Soc., Dalton Trans.* **1977**, 1283–1291.
- (307) Gynane, M. J. S.; Harris, D. H.; Lappert, M. F.; Power, P. P.; Riviere, P.; Riviere-Baudet, M. Subvalent Group-4b Metal Alkyls and Amides .5. Synthesis and Physical-Properties of Thermally Stable Amides of Germanium(II), Tin(II), and Lead(II). *J. Chem. Soc. Dalton Trans.* **1977**, 2004–2009.
- (308) Carty, A. J.; Taylor, N. J.; Lappert, M. F.; Pye, P. L.; Smith, W. F. C-C Bond-making by Trapping of a Nucleophilic Carbene (from an Electron-rich Olefin) by a σ - π -Acetylide(hexacarbonyl)di-iron Complex ; X-Ray Crystal and Molecular Structure of [(OC)₃FeC(+CNMeCH₂CH₂NMe)C(Ph)Fe(CO)₃PPh₂]. *J. Chem. Soc. Chem. Commun.* **1978**, 1017–1019.
- (309) Cundy, C. S.; Lappert, M. F.; Yuen, C. K. Metal-Silacyclobutane Complexes .1. Derivatives of Iron and Manganese. *J. Chem. Soc. Dalton Trans.* **1978**, 427–433.
- (310) Lappert, M. F.; Pye, P. L. Carbene Complexes .15. Synthesis and Properties of Electron-rich Olefin-derived Mono and Oligo-Carbenenitrosyl-Ruthenium, Osmium, and Nickel Complexes. *J. Chem. Soc. Dalton Trans.* **1978**, 837–844.
- (311) Riviere, P.; Richelme, S.; Riviere-Baudet, M.; Satge, J.; Gynane, M. J. S.; Lappert, M. F. Free-Radical 1,3-Addition of Germanes GeR₂R'H or SiPh₃H to Nitrones [PhCH=N(R')O (R' = Ph or Bu^t) or Me₂CCH₂CH₂C(R')N=O] - and Spin-Trapping of Corresponding Germyl Radicals GeR₂R' to form the Nitroxides GeR₂R'-CH(Ph)NOBu^t (R = R' = Et or Ph, or R₂R', Ph₂Cl or PhCl₂). *J. Chem. Res.* **1978**, 218–219.
- (312) Lappert, M. F.; Milne, C. R. C. A New Approach to Cationic Transition-Metal Alkyls [M(η -C₅H₅)₂(CH₂SiMe₃)₂]⁺[Y]⁻ (M = Nb or Ta, Y = BF₄ or SbF₆) and their Conversion into Alkylidene Complexes [M(η -C₅H₅)₂(CHSiMe₃)(CH₂SiMe₃)]. *J. Chem. Soc. Chem. Commun.* **1978**, 925–926.

- (313) Cundy, C. S.; Lappert, M. F. Reactions of Strained Organosilicon Heterocycles with Nonacarbonyldiiron(0) .2. Preparation and Reactions of Silaferracyclopentanes. *J. Chem. Soc. Dalton Trans.* **1978**, 665–673.
- (314) Lappert, M. F.; Shaw, D. B. Aspects of Coordination Chemistry of some Electron-Rich Poly-Organosulfur Compounds - Bis(ethylthio)carbene Complexes $[M(CO)_5(C(SET)_2)]$ (M = Cr or W) from $Na[TosNNC(SET)_2]$ (Tos = $MeC_6H_4-p-SO_2$). *J. Chem. Soc. Chem. Commun.* **1978**, 146–147.
- (315) Barker, G. K.; Lappert, M. F.; Howard, J. A. K. Silylmethyl and Related Complexes .6. Preparation, Properties, and Crystal and Molecular Structure of Tris[bis(trimethylsilyl)methyl]chromium(III) - Chemistry of Related Compounds of Titanium(III), Vanadium(III), Zirconium(IV), and Hafnium(IV). *J. Chem. Soc. Dalton Trans.* **1978**, 734–740.
- (316) Hollaway, M. R.; White, H. A.; Makin, R. A.; Joblin, K. N.; Johnson, A. W.; Lappert, M. F.; Wallis, O. C. Single Wavelength and Rapid Wavelength-Scanning Stopped-Flow Kinetic Studies of Ethanolamine Ammonia-Lyase-Catalyzed Reactions - Kinetic Method for Determination of the Number of Active-Sites Per Molecule and a Description of the Reaction Pathway. *Hoppe-Seylers Zeitschrift Fur Physiol. Chemie* **1978**, 359 (9), 1043.
- (317) Lappert, M. F. Unusual Metal Alkyls. *Pure Appl. Chem.* **1978**, 50, 703–708.
- (318) Hollaway, M. R.; White, H. A.; Joblin, K. N.; Johnson, A. W.; Lappert, M. F.; Wallis, O. C. Spectrophotometric Rapid Kinetic Study of Reactions by Coenzyme-B₁₂-Dependent Ethanolamine Ammonia-Lyase. *Eur. J. Biochem.* **1978**, 82, 143–154.
- (319) Hartshorn, A. J.; Johnson, A. W.; Kennedy, S. M.; Lappert, M. F.; Macquitty, J. J. Light-induced Conversion of Ethane-1,2-diol or 2-Aminoethanol into Acetaldehyde in the presence of 8-Methoxy-5'-deoxy-5'-adenosylcobalamin or a simpler Cobalt(III) Alkyl. *J. Chem. Soc. Chem. Commun.* **1978**, 643–644.
- (320) Hartshorn, A. J.; Lappert, M. F.; Turner, K. Carbene Complexes .13. Synthesis and Characterization of Secondary Carbene Complexes of Vanadium(I), Chromium(0), Molybdenum(0), Tungsten(0), Manganese(I), Rhenium(I), Iron(0), Ruthenium(II), Cobalt(I), Iridium(III) and Platinum(IV), and Hydridorhodium(I). *J. Chem. Soc. Dalton Trans.* **1978**, 348–356.
- (321) Gynane, M. J. S.; Lappert, M. F.; Miles, S. J.; Power, P. P. Catalysis and Solvent Participation in Organometallic Oxidative Additions (Pt(0)-Pt(II) and Sn(II)-Sn(IV)). *J. Chem. Soc. Chem. Commun.* **1978**, 192–193.
- (322) Atwood, J. L.; Hunter, W. E.; Rogers, R. D.; Holton, J.; Mcmeeking, J.; Pearce, R.; Lappert, M. F. Neutral and Anionic Silylmethyl Complexes of Group 3a and Lanthanoid Metals ; X-Ray Crystal and Molecular-Structure of $[Li(thf)_4][Yb[CH(SiMe_3)_2]_3Cl]$ (thf = tetrahydrofuran) *J. Chem. Soc. Chem. Commun.* **1978**, 140–142.

- (323) Cardin, C. J.; Cardin, D. J.; Lappert, M. F.; Muir, K. W. Unsaturated σ -Hydrocarbyl Transition-Metal Complexes .4. Crystal and Molecular-Structure of *trans*-Chlorobis(diethylphenylphosphine)(phenylethynyl)platinum(II) and Comments on the Relative *Trans* Influence of Various Carbon Ligands. *J. Chem. Soc. Dalton Trans.* **1978**, 46–50.
- (324) Cundy, C. S.; Lappert, M. F.; Yuen, C. K. Metal-substituted Silacyclobutanes .2. Derivatives of Silicon, Germanium, and Tin. *Inorg. Chem.* **1978**, *17*, 1092–1093.
- (325) Hitchcock, P. B.; Lappert, M. F.; Pye, P. L. Carbene Complexes .14. Synthesis and Steric and Electronic Effects in Electron-rich Olefin-derived Bis-, Tris- and Tetrakis(carbene)ruthenium(II) and a Tetrakis(carbene)osmium(II) Complex - Crystal and Molecular Structure of *trans*-Dichlorotetrakis(diethylimidazolinidin-2-ylidene)ruthenium(II). *J. Chem. Soc. Dalton Trans.* **1978**, 826–836.
- (326) Cundy, C. S.; Lappert, M. F. Reactions of Hydridosilacyclobutanes with Low-valent Complexes of Iron or Platinum. *J. Organomet. Chem.* **1978**, *144*, 317–320.
- (327) Jeffery, J.; Lappert, M. F.; Luong-thi, N. T.; Atwood, J. L.; Hunter, W. E. Bulky Alkyls and a Hydridoalkyl of Zirconium(IV). The Influence of Steric Constraints upon (i) Conformation and the Zr-C Rotational Barrier and (ii) the Zr-C Bond Length. X-Ray Crystal and Molecular Structure of $[\text{Zr}(\eta\text{-C}_5\text{H}_5)_2\{\text{CH}(\text{SiMe}_3)_2\}\text{Ph}]$. *J. Chem. Soc. Chem. Commun.* **1978**, 1081–1083.
- (328) Gynane, M. J. S.; Jeffery, J.; Lappert, M. F. Organozirconium(III)-dinitrogen Complexes. Evidence for $(\eta^2\text{-N}_2)$ -Metal Bonding in $[\text{Zr}(\eta\text{-C}_5\text{H}_5)_2(\text{N}_2)(\text{R})]$ [$\text{R} = \text{Me}_3\text{Si}_2\text{CH}$]. *J. Chem. Soc. Commun.* **1978**, 34–36.
- (329) Lappert, M. F. Aspects of the Chemistry of the Early Transition-Metal Alkyls. *Abstr. Pap. Am. Chem. Soc.* **1978**, *176* (Sep), 1.
- (330) Holton, J.; Lappert, M. F.; Ballard, D. G. H.; Pearce, R.; Atwood, J. L.; Hunter, W. E. Alkyl-bridged Complexes of the d-Block And f-Block Elements .2. Bis[bis(η -cyclopentadienyl)methylmetal(III)] Complexes, and the Crystal and Molecular Structure of the Yttrium and Ytterbium Species. *J. Chem. Soc. Dalton Trans.* **1979**, 54–61.
- (331) Lappert, M. F.; Shaw, D. B.; McLaughlin, G. M. Coordination Chemistry of Electron-rich Poly(organosulfur) Compounds .1. Chromium(0), Molybdenum(0), and Tungsten(0) Complexes having Tetrakis(thioalkyl)olefins as 2-Electron or 4-Electron Donors - Crystal and Molecular-Structure of Tetracarbonyl[tetrakis(methylthio)ethene-SS']chromium. *J. Chem. Soc. Dalton Trans.* **1979**, 427–433.
- (332) Lappert, M. F.; Power, P. P.; Slade, M. J.; Hedberg, L.; Hedberg, K.; Schomaker, V. Monomeric Bivalent Group 4b Metal Dialkylamides $\text{M}[\text{NCMe}_2(\text{CH}_2)_3\text{CMe}_2]_2$ ($\text{M} = \text{Ge}$ or Sn), and the Structure of a Gaseous Disilylamide, $\text{Sn}[\text{N}(\text{SiMe}_3)_2]_2$, by Gas Electron-Diffraction. *J. Chem. Soc. Commun.* **1979**, 369–370.
- (333) Hitchcock, P. B.; Lappert, M. F.; Pye, P. L.; Thomas, S. Carbene Complexes .16. Synthesis and Properties of NN'N''N'''-Tetraaryl-substituted Electron Rich Olefin-

- derived Carbeneruthenium(II) Complexes Containing a Spontaneously Formed *ortho*-Metallated-N-Arylcarbene Ligand .16. Crystal and Molecular-Structures. *J. Chem. Soc. Dalton Trans.* **1979**, 1929–1942.
- (334) Wallis, O. C.; Johnson, A. W.; Lappert, M. F. Studies on The Subunit Structure of the Adenosylcobalamin-dependent Enzyme Ethanolamine Ammonia-Lyase. *FEBS Lett.* **1979**, 97 (1), 196–199.
- (335) Lappert, M. F.; Riley, P. I.; Yarrow, P. I. W. New Approach to Anionic Transition-Metal Alkyls ; Synthesis and ESR Characterization of the d^1 Dialkylmetallate(III)s $[M(\eta-C_5H_4R^1)_2R^2]^-$ (M = Ti, Zr, or Hf). *J. Chem. Soc. Chem. Commun.* **1979**, 305–306.
- (336) Carty, A. J.; Taylor, N. J.; Coleman, A. W.; Lappert, M. F. The Chromium-Heavy Group-5 Donor Bond - Comparison of Structural-Changes within the Series $[Cr(CO)_5(XPh_3)]$ (X = P, As, Sb, or Bi) via their X-Ray Crystal-Structures. *J. Chem. Soc. Chem. Commun.* **1979**, 639–640.
- (337) Holton, J.; Lappert, M. F.; Ballard, D. G. H.; Pearce, R.; Atwood, J. L.; Hunter, W. E. Alkyl-bridged Complexes of the d-block and f-block Elements .1. Di- μ -Alkylbis(η -cyclopentadienyl)metal(III)dialkylaluminium(III) Complexes and the Crystal and Molecular Structure of the Ytterbium Methyl Species. *J. Chem. Soc. Dalton Trans.* **1979**, 45–53.
- (338) Cetinkaya, B.; Lappert, M. F.; Torroni, S. Amides of Rhodium(I) and Ruthenium(II), $[Rh(NR_2)(PPh_3)_2]$ and $[RuH(NR_2)(PPh_3)_2]$ (R=Me₃Si) ; Novel Low Coordination Number d^8 and d^6 Metal-Complexes. *J. Chem. Soc. Chem. Commun.* **1979**, 843–844.
- (339) Cornish, A. J.; Lappert, M. F.; MacQuitty, J. J.; Maskell, R. K. Homogeneous Catalysis .7. Catalysis of Isoprene Hydrosilylation using Metal Atoms. *J. Organomet. Chem.* **1979**, 177, 153–161.
- (340) Cetinkaya, B.; Hitchcock, P. B.; Lappert, M. F.; Pye, P. L.; Shaw, D. B. Coordination Chemistry of Electron-rich Poly(organosulfur) Compounds .2. Comparative Data on Reactions of Di- μ -chloro-bis-[chloro(triethylphosphine)platinum(II)], and the Crystal and Molecular-Structure of *cis*- μ -2,2-Bis(methylthio)ethene-1,1-dithiolate-SS". *J. Chem. Soc. Dalton Trans.* **1979**, 434–440.
- (341) Lappert, M. F.; Luong-thi, N. T.; Milne, C. R. C. Stable Acyls and Iminoacyls of Zirconium(IV), $[Zr(\eta-C_5H_5)_2[C(=X)R]R']$ [X = O or NTo1-*p* ; R = Me₃CCH₂, Me₃SiCH₂, or (Me₃Si)₂CH; R' = Cl or Alkyl]. *J. Organomet. Chem.* **1979**, 174, C35--C37.
- (342) Jeffery, J.; Lappert, M. F.; Riley, P. I. Organozirconium Dinitrogen Complexes $[Zr(\eta-C_5H_4R')_2(\eta^2-N_2)R]$ and $[(Zr(\eta-C_5H_5)_2R)_2N_2]$ [R = (Me₃Si)₂CH, R' = H or Me]. *J. Organomet. Chem.* **1979**, 181 (1), 25–36.
- (343) Cornish, A. J.; Lappert, M. F.; Filatovs, G. L.; Nile, T. A. Homogeneous Catalysis .6. Hydrosilylation using Tris(pentanedionato)rhodium(III) or Tetrakis(μ -acetato)dirhodium(II) as Catalyst. *J. Organomet. Chem.* **1979**, 172, 153–163.

- (343a) Lappert, M F, Power, P P, Sanger, A R, Srivastava R C , *Metal and Metalloid Amides, Syntheses, Structures, and Physical and Chemical Properties*, Ellis Horwood, Chichester, **1980**, 780pp
- (344) Hollaway, M. R.; Johnson, A. W.; Lappert, M. F.; Wallis, O. C. The Number of Functional Active-Sites per Molecule of the Adenosylcobalamin-dependent Enzyme, Ethanolamine Ammonia-Lyase, as determined by a Kinetic Method. *Eur. J. Biochem.* **1980**, *111* (1), 177–188.
- (345) Lappert, M. F.; Martin, T. R.; Atwood, J. L.; Hunter, W. E. Metal Complexes Derived from The *ortho*-Xylylidene Ligand, *ortho*-C₆H₄(CH₂)₂, and the X-Ray Crystal and Molecular-Structure of the Metallocycle [Zr(η-C₅H₅)₂[(CH₂)₂C₆H₄-*o*]]. *J. Chem. Soc. Chem. Commun.* **1980**, 476–477.
- (346) Lappert, M. F.; McCabe, R. W.; MacQuitty, J. J.; Pye, P. L.; Riley, P. I. Paramagnetic Carbene-Metal Complexes .1. Cationic Chromium(I) Complexes and the Chemistry of their Chromium(0) Precursors and of Related Molybdenum(0) and Tungsten(0) Complexes, especially with Bulky Carbene Ligands C(OR')R [R = CH(SiMe₃)₂ or CH₂SiMe₃]. *J. Chem. Soc. Dalton Trans.* **1980**, 90–98.
- (347) Carty, A. J.; Gynane, M. J. S.; Lappert, M. F.; Miles, S. J.; Singh, A.; Taylor, N. J. Silylmethyl and Related Complexes .7. Bulky, Monomeric, Heavy Group-3 Metal Trialkyls and the Crystal and Molecular-Structure of In[CH(SiMe₃)₂]₃. *Inorg. Chem.* **1980**, *19* (12), 3637–3641.
- (348) Cetinkaya, B.; Hitchcock, P. B.; Lappert, M. F.; Torroni, S.; Atwood, J. L.; Hunter, W. E.; Zaworotko, M. J. Transition-Metal Complexes of two Valence Tautomers of a Bulky Phenoxide, 2,6-Bu^t-4-MeC₆H₂O⁻ (ArO⁻) - Preparation and Crystal and Molecular-Structure of a Phenoxytitanium(III) and a Cyclohexadienonylrhodium(I) Complex, [Ti(η-C₅H₅)₂OAr] and [Rh(ArO-η⁵)(PPh₃)₂]. *J. Organomet. Chem.* **1980**, *188*, C31--C35.
- (349) Lappert, M. F.; Raston, C. L. Metal-Complexes derived from a Bidentate Ligand possessing two Chiral Centers, *o*-C₆H₄[CH(SiMe₃)₂]₂ . Stereospecific Synthesis of the *meso*-Metallocycles [M[CH(SiMe₃)C₆H₄CH(SiMe₃)-*o*](η-C₅H₅)₂] and their Reversible One-Electron Reduction. *J. Chem. Soc. Chem. Commun.* **1980**, 1284–1285.
- (350) Lappert, M. F. Aspects of Free-Radical Organometallic Chemistry. *Abstr. Pap. Am. Chem. Soc.* **1980**, *180* (Aug), 204--Inorg.
- (351) Lappert, M. F. Correction. *J. Organomet. Chem.* **1980**, *195*, C34.
- (352) Gynane, M. J. S.; Hudson, A.; Lappert, M. F.; Power, P. P.; Goldwhite, H. Bulky Alkyls, Amides, and Aryloxides of Main Group 5 Elements .1. Persistent Phosphinyl and Arsinyl Radicals .MRR' and their Chloroprecursors MRR'Cl and Related Compounds. *J. Chem. Soc. Dalton Trans.* **1980**, 2428–2433.
- (353) Cetinkaya, B.; Gumrukcu, I.; Lappert, M. F.; Atwood, J. L.; Shakir, R. Lithium and Sodium 2,6-Di-*tert*-butylphenoxides and the Crystal and Molecular-Structure of [Li(OC₆H₂Me-4-Bu^t-2,6)(OEt₂)₂]. *J. Am. Chem. Soc.* **1980**, *102*, 2086–2088.

- (354) Lappert, M. F.; Slade, M. J.; Atwood, J. L.; Zaworotko, M. J. Monomeric, Colored Germanium(II) and Tin(II) Di-*t*-Butylamides, and the Crystal and Molecular-Structure of $\text{Ge}(\text{NCMe}_2[\text{CH}_2]_3\text{CMe}_2)_2$. *J. Chem. Soc. Chem. Commun.* **1980**, 621–622.
- (355) Lappert, M. F.; Martin, T. R.; McLaughlin, G. M. Telluroureas and Derived Transition-Metal Complexes - The Crystal and Molecular-Structure of $[\text{Cr}(\text{CO})_5[\text{Te}=\text{CN}(\text{Et})\text{CH}_2\text{CH}_2\text{NEt}]]$. *J. Chem. Soc. Chem. Commun.* **1980**, 635–637.
- (356) Gumrukcu, I.; Hudson, A.; Lappert, M. F.; Slade, M. J.; Power, P. P. Electron Spin Resonance of *t*-Alkylaminyl, Silylaminyll and Germylaminyl Radicals and some Observations on the Amides $\text{GeBr}(\text{N}(\text{SiMe}_3)_2)_3$, $\text{SnBr}(\text{N}(\text{SiMe}_3)_2)_3$, $\text{PbBr}(\text{N}(\text{SiMe}_3)_2)_3$. *J. Chem. Soc. Chem. Commun.* **1980**, 776–777.
- (357) Bohm, M. C.; Daub, J.; Gleiter, R.; Hofmann, P.; Lappert, M. F.; Ofele, K. Electron-Structure of Organometal Compounds .7. The He(I) Photoelectron Spectra of Tetracarbonyliron(0) Complexes with Carbenes. *Chem. Berichte-Recueil* **1980**, *113*, 3629–3646.
- (358) Gynane, M. J. S.; Lappert, M. F.; Riley, P. I.; Riviere, P.; Rivierebaudet, M. Triarylsilyl, Triarylgermyl, and Triarylstannyl Radicals. MAr_3 (M = Si, Ge, or Sn and Ar = 2,4,6-Me₃C₆H₂) and $\cdot\text{Ge}(2,6\text{-Me}_2\text{C}_6\text{H}_3)_3$ - Synthesis and Electron-Spin Resonance Studies. *J. Organomet. Chem.* **1980**, *202*, 5–12.
- (359) Lappert, M. F.; Martin, T. R.; Milne, C. R. C.; Atwood, J. L.; Hunter, W. E.; Pentilla, R. E. Synthesis and Structure of the Nb-IV Metallocycles $[\text{M}(\eta\text{-C}_5\text{H}_4\text{SiMe}_3)_2[\text{CH}_2\text{C}_6\text{H}_4\text{CH}_2\text{-}o]]$ (M = Nb, R=Me₃Si) and Reductive Cleavage of d⁰ Analogues (M = Ti, Zr, or Hf, R = H or Me₃Si) by Na[C₁₀H₈]. *J. Organomet. Chem.* **1980**, *192* (2), C35--C38.
- (360) Gani, D.; Johnson, A. W.; Lappert, M. F. Intramolecular Free-Radical Functionalization of the Methyl Group of 5'-Deoxyadenosine. *J. Chem. Soc. Chem. Commun.* **1980**, 1244–1245.
- (361) Hall, T. L.; Lappert, M. F.; Lednor, P. W. Mechanistic Studies of some Oxidative-Addition Reactions. Free-Radical Pathways in the $\text{Pt}^0\text{-RX}$, $\text{Pt}^0\text{-PhBr}$, and $\text{Pt}^{\text{II}}\text{-R}'\text{SO}_2\text{X}$ Reactions (R = Alkyl, R' = Aryl, X = Halide) and in the related Rhodium(I) or Iridium(I) Systems. *J. Chem. Soc. Dalton Trans.* **1980**, 1448–1456.
- (362) Hitchcock, P. B.; Lappert, M. F.; Terreros, P.; Wainwright, K. P. The Synthesis and Properties of the Transannularly Bonded Electron-Rich Olefin Derived From 1,4,8,11-Tetra-azacyclotetradecane ; X-Ray Crystal-Structure of the Chelating *cis*-Dicarbenerhodium(I) Salt obtained therefrom. *J. Chem. Soc. Chem. Commun.* **1980**, 1180–1181.
- (363) Lappert, M. F.; Yarrow, P. I. W.; Atwood, J. L.; Shakir, R.; Holton, J. Preparation and of some Bis(cyclopentadienyl)ytterbium(II) Complexes and the X-Ray Crystal and Molecular-Structures of $[\text{Yb}(\eta\text{-C}_5\text{H}_4\text{SiMe}_3)_2(\text{THF})_2]$. *J. Chem. Soc. Chem. Commun.* **1980**, 987–988.

- (364) Cetinkaya, B.; Gumrukcu, I.; Lappert, M. F.; Atwood, J. L.; Rogers, R. D.; Zaworotko, M. J. Bivalent Germanium, Tin, and Lead 2,6-Di-tert-butylphenoxides and the Crystal and Molecular Structures of $M(\text{OC}_6\text{H}_2\text{Me-4-Bu}^t\text{-2,6})_2$ ($M = \text{Ge}$ or Sn). *J. Am. Chem. Soc.* **1980**, *102* (6), 2088–2089.
- (365) Lappert, M. F.; Macquitty, J. J.; Pye, P. L. Paramagnetic Carbene-Metal Complexes .2. Synthesis and Spectroscopic Studies of Stable Electron-rich Olefin-derived Paramagnetic Carbenecarbonyliron(I) and Carbenenitrosyliron(I) Complexes. *J. Chem. Soc. Dalton Trans.* **1981**, 1583–1592.
- (366) Rivière, P.; Richelme, S.; Rivière-Baudet, M.; Satgé, J.; Riley, P. I.; Lappert, M. F.; Dunogues, J.; Calas, R. 1,3-Additions of Silanes or Stannanes $M(\text{H})\text{R}_2\text{R}'$ to Nitrones $[\text{PhCH}=\text{N}(\text{R}'')\text{O}$ ($\text{R}'' = \text{Ph}$ or Bu^t) or $\text{Me}_2\text{CCH}_2\text{C}(\text{R}'')\text{NO}$ ($\text{R}'' = \text{H}$ or Me)] ; Characterization of Derived Nitroxide Radicals, $\text{R}_2\text{R}'\text{M-C-N}^{\cdot}\text{-O}$, or *O*-Metallohydroxylamines or *C*-Metallohydroxylamines, $\text{R}_2\text{R}'\text{M-O-N-CH}$. *J. Chem. Res.* **1981**, (*S*) 130–131, (*M*) 1663.
- (367) Gani, D.; Hollaway, M. R.; Johnson, A. W.; Lappert, M. F.; Wallis, O. C. Aspects of the Chemistry of ϵ -Adenosine and ϵ -Adenosyl-cobalamin, The $1, \text{N}^6$ -Etheno Analog of Coenzyme- B_{12} . *J. Chem. Res.* **1981**, (*S*) 190–191; (*M*) 2327.
- (368) Hitchcock, P. B.; Lappert, M. F.; Milne, C. R. C. Metallocene Derivatives of Early Transition-Elements .1. Niobium(IV) Chlorides, Chloroalkyls, and Dialkyls $[\text{Nb}(\eta\text{-C}_5\text{H}_4\text{X})_2\text{RR}']$, and the Crystal and Molecular-Structure of $[\text{Nb}(\eta\text{-C}_5\text{H}_5)_2(\text{CH}_2\text{Ph})_2]$. *J. Chem. Soc. Dalton Trans.* **1981**, 180–186.
- (369) Bristow, G. S.; Hitchcock, P. B.; Lappert, M. F. A Novel Carbon Dioxide Complex : Synthesis and Crystal-Structure of $[\text{Nb}(\eta\text{-C}_5\text{H}_4\text{Me})_2(\text{CH}_2\text{SiMe}_3)(\eta^2\text{-CO}_2)]$. *J. Chem. Soc. Chem. Commun.* **1981**, 1145–1146.
- (370) Lappert, M. F.; Raston, C. L. A Zirconocene(IV) Chloroalkyl and Dialkyl containing Chiral α -Carbon Atoms, $[\text{Zr}(\eta\text{-C}_5\text{H}_5)_2(\text{R}^*)(\text{X})]$ [$\text{R}^* = \text{CH}(\text{SiMe}_3)\text{C}_6\text{H}_4\text{Me-}o$, $\text{X} = \text{Cl}$ or R^*] - Synthesis, Stereoisomerism, and d^1 Reduction Products. *J. Chem. Soc. Chem. Commun.* **1981**, 173–175.
- (371) Lappert, M. F.; Singh, A.; Atwood, J. L.; Hunter, W. E. Use of the Bis(trimethylsilyl)cyclopentadienyl Ligand for stabilizing Early (f^0 - f^3) Lanthanocene Chlorides . X-Ray Structure of $[\text{Pr}(\eta\text{-}[\text{C}_5\text{H}_3(\text{SiMe}_3)_2])_2\text{Cl}]_2$ and of Isoleptic Scandium and Ytterbium Complexes. *J. Chem. Soc. Chem. Commun.* **1981**, 1190–1191.
- (372) Lappert, M. F.; Riley, P. I.; Yarrow, P. I. W.; Atwood, J. L.; Hunter, W. E.; Zaworotko, M. J. Metallocene Derivatives of Early Transition-Elements .3. Synthesis, Characterization, Conformation, and Rotational Barriers [for the $\text{Zr-C}(\text{sp}^3)$ bond] of the Zirconium(IV) Complexes $[\text{Zr}(\eta\text{-C}_5\text{H}_4\text{R})_2(\text{CH}(\text{SiMe}_3)_2)\text{Cl}]$ and the Crystal and Molecular-Structures of the *t*-Butyl and Trimethylsilyl Complexes ($\text{R} = \text{CMe}_3$ or SiMe_3). *J. Chem. Soc. Dalton Trans.* **1981**, 814–821.
- (373) Kermode, N. J.; Lappert, M. F.; Skelton, B. W.; White, A. H.; Holton, J. Synthesis of α -Functionalised-Alkylplatinum(II) Complexes by Oxidative Addition of Geminal

- Dihalides to Platinum(0) Substrates - X-Ray Structure of *cis*-[Pt(CH₂I)(PPh₃)₂]. *J. Chem. Soc. Chem. Commun.* **1981**, 698–699.
- (374) Lappert, M. F.; Pickett, C. J.; Riley, P. I.; Yarrow, P. I. W. Metallocene Derivatives of Early Transition-Metals .2. Substituted Cyclopentadienyl Group-4a Dichloro-metallocene Complexes [M(η-C₅H₄R)₂Cl₂] (M = Zr or Hf. R = Me, Et, Prⁱ, Bu^t, or SiMe₃), their Monoalkyl and Dialkyl Derivatives [M(η-C₅H₄R)₂R'X] (X = Cl or R'; R' = CH₂SiMe₃ or CH₂CMe₃) and their reduction products. *J. Chem. Soc. Dalton Trans.* **1981**, 805–813.
- (375) Lappert, M. F.; Singh, A.; Atwood, J. L.; Hunter, W. E. Organometallic Complexes of the Group-3a and Lanthanoid Metals Containing M(μ-Cl)₂Li Bridging Units : The X-Ray Structure of [Nd(η-[C₅H₃(SiMe₃)₂])₂(μ-Cl)₂Li(THF)₂] (THF =Tetrahydrofuran). *J. Chem. Soc. Chem. Commun.* **1981**, 1191–1193.
- (376) Hudson, A.; Lappert, M. F.; Lednor, P. W.; MacQuitty, J. J.; Nicholson, B. K. Photolytic Homolysis of the Metal-Carbon (sp³ or sp²) Bond of Alkyl or Acyl Transition-Metal Complexes - An Electron-Spin Resonance Study using Spin Trapping - and a Note on Aminyl Oxides [ML_n(N(O)R)][ML_n = Ru(CO)₄(SiMe₃), Os(CO)₄(SiMe₃), or Fe(η-C₃H₅)(CO)₃; R = aryl]. *J. Chem. Soc. Dalton Trans.* **1981**, 2159–2163.
- (377) Lappert, M. F.; Miles, S. J.; Atwood, J. L.; Zaworotko, M. J.; Carty, A. J. Oxidative Addition of an Alcohol to the Alkylgermanium(II) Compound Ge[CH(SiMe₃)₂]₂ - Molecular-Structure of Ge[CH(SiMe₃)₂]₂(H)OEt. *J. Organomet. Chem.* **1981**, 212, C4-C6.
- (378) Lappert, M. F.; Raston, C. L.; Rowbottom, G. L.; White, A. H. Synthesis and X-Ray Crystal-Structure of a W^v Metallocycle [(W(CH₂C₆H₄CH₂-o)₂O)₂Mg(tetrahydrofuran)₄]. *J. Chem. Soc. Chem. Commun.* **1981**, 6–8.
- (379) Jeffery, J.; Lappert, M. F.; Luongthi, N. T.; Webb, M.; Atwood, J. L.; Hunter, W. E. Metallocene Derivatives of Early Transition-Metals .4. Chemistry of the Complexes [M(η-C₅H₅)₂RR'] [M = Ti, Zr, or Hf- R = CH₂M'Me₃ (M' = C, Si, Ge, or Sn) or CH(SiMe₃)₂ R' = Cl or Alkyl] and the X-Ray Structures of [Zr(η-C₅H₅)₂(CH₂M'Me₃)₂] (M' = C or Si). *J. Chem. Soc. Dalton Trans.* **1981**, 1593–1605.
- (380) Suradi, S.; Hacking, J. M.; Pilcher, G.; Gumrukcu, I.; Lappert, M. F. Enthalpies of Combustion of 5 Sterically Hindered Amines. *J. Chem. Thermodyn.* **1981**, 13 (9), 857–861.
- (381) Gani, D.; Johnson, A. W.; Lappert, M. F. Intramolecular Free-Radical Functionalization of the Methyl-Group of 5'-Deoxyadenosine. *J. Chem. Soc. Perkin Trans.1* **1981**, 3065–3069.
- (382) Lappert, M. F.; Pye, P. L.; Rogers, A. J.; McLaughlin, G. M. Carbene Complexes .17. Crystal-Structure of *trans*-Tetracarbonylbis(1,3-Dimethylimidazolidin-2-ylidene)molybdenum(0), *trans*-[Mo(CO)₄-[CN(Me)CH₂CH₂NMe]₂], Structural Comparison with the *cis*-Isomer, and a Kinetic-Study of the *trans-cis* Isomerization. *J. Chem. Soc. Dalton Trans.* **1981**, 701–704.

- (383) Lappert, M. F.; Raston, C. L.; Skelton, B. W.; White, A. H. A Metallocycle - Synthesis, One-Electron Reduction, and Crystal-Structure of the Thermally Robust Complex Tris-*o*-xylidenetungsten(VI), [W(CH₂C₆H₄CH₂-*o*)₃]. *J. Chem. Soc. Chem. Commun.* **1981**, 485–486.
- (384) Lappert, M.; Cardin, D.; Raston, C. L.; Riley, P. I. Zirconium and Hafnium. In *Comprehensive Organometallic Chemistry* Vol 3 Stone, F.G.A. and Abel, E.W. Eds; Pergamon, 1982.
- (385) Lappert, M. F.; Maskell, R. K. A New Class of Benzoin Condensation Catalyst, The Bi(1,3-dialkylimidazolidin-2-ylidenes). *J. Chem. Soc. Chem. Commun.* **1982**, 580–581.
- (386) Lappert, M. F.; Engelhardt, L. M.; Raston, C. L.; White, A. H. Synthesis of [Li(CH₂SiMe₃) (pmdeta)] and the Crystalline Monomeric Bulky Alkyl lithium Complexes [LiR(tmeda)] and [LiR(pmdeta)] [R = CH(SiMe₃)₂] - X-Ray Crystal-Structure of [Li(CH(SiMe₃)₂)(pmdeta)] (tmeda = Me₂NCH₂CH₂NMe₂, pmdeta = Me₂N[CH₂]₂NMe[CH₂]₂NMe₂). *J. Chem. Soc. Chem. Commun.* **1982**, 1323–1324.
- (387) Cetinkaya, B.; Hudson, A.; Lappert, M. F.; Goldwhite, H. Generation and Electron-Spin-Resonance Spectra of some new Phosphorus-centered Radicals P₂Ar₂X, P(Ar)X, P(OAr)₂, PAr₂(=O), PAr[N(SiMe₃)₂] (=NSiMe₃), and [P₂Ar₂].- derived from the Bulky Group C₆H₂Bu^t_{3-2,4,6} (= Ar). *J. Chem. Soc. Chem. Commun.* **1982**, 609–610.
- (388) Kermode, N. J.; Lappert, M. F.; Skelton, B. W.; White, A. H.; Holton, J. Synthesis of Ylideplatinum(II) Complexes via α -Functionalized Alkylplatinum(II) Intermediates and some Comparative Data on Palladium(II) Complexes - X-Ray Structure of *trans*-[Pt(CH₂PET₃)I(PET₃)₂]. *J. Organomet. Chem.* **1982**, 228 (3), C71–C75.
- (389) Lappert, M. F. Correction. *J. Chem. Soc. Chem. Commun.* **1982**, 772.
- (390) Lappert, M. F.; Martin, T. R.; Raston, C. L.; Skelton, B. W.; White, A. H. Chemistry of *ortho*-Xylidene-Metal Complexes .1. *ortho*-Xylidene-Magnesium Reagents as Metallocyclic Precursors and Synthesis of [Pt(CH₂C₆H₄CH₂-*o*)(COD)] (COD = Cycloocta-1,5-diene) - The X-Ray Crystal-Structure of the Macrometallocycle [(Mg(CH₂C₆H₄CH₂-*o*)(C₄H₈O)₂]₃. *J. Chem. Soc. Dalton Trans.* **1982**, 1959–1964.
- (391) Lappert, M. F.; Singh, A. Bis(η -cyclopentadienyl)lanthanoid(III) Chlorides. *J. Organomet. Chem.* **1982**, 239, 133–141.
- (392) Lappert, M. F.; Wingpor Leung; Raston, C. L.; Thorne, A. J.; Skelton, B. W.; White, A. H. Synthesis (via Reductive Elimination or Metathesis) and X-Ray Crystal-Structure of a Tetrameric *meso*-Tin(I) Metallocycle Sn(CHSiMe₃C₆H₄CHSiMe₃-*o*), and Characterization of *meso,meso*-Sn(CHSiMe₃C₆H₄CHSiMe₃-*o*)₂. *J. Organomet. Chem.* **1982**, 233, C28–C32.
- (393) Bristow, G. S.; Hitchcock, P. B.; Lappert, M. F. Formation of Coordinated Diphenylketen from Carbon-Monoxide and an Alkylzirconocene(IV) Benzhydryl Complex - X-Ray Structure of [(Zr(η -C₅H₅)₂(OC=CPh₂))₂]. *J. Chem. Soc. Chem. Commun.* **1982**, 462–464.

- (394) Hitchcock, P. B.; Lappert, M. F.; Terreros, P. Synthesis of Homoleptic Tris(organo-chelate)iridium(III) Complexes by Spontaneous Orthometallation of Electron-rich Olefin-derived *N,N'*-Diarylcarbene Ligands and the X-Ray Structures of *fac*-[Ir{CN(C₆H₄Me-*p*)(CH₂)₂NC₆H₃Me-*p*}₃] and *mer*-[Ir{CN(C₆H₄Me-*p*)(CH₂)₂NC₆H₃Me-*p*}₂][CN(C₆H₄Me-*p*)(CH₂)₂NC₆H₄Me-*p*]Cl. A product of HCl cleavage. *J. Organomet. Chem.* **1982**, 239, C26--C30.
- (395) Fjeldberg, T.; Haaland, A.; Lappert, M. F.; Schilling, B. E. R.; Seip, R.; Thorne, A. J. A New Method for the Preparation of Bis(bis(trimethylsilyl)methyl)tin(II), Sn[CH(SiMe₃)₂]₂ and its Molecular-Structure as determined by Gas Electron-Diffraction - Prediction of Non-Planar, *trans*-Folded Ground-State Structures for Digermene (Ge₂H₄) and Distannene (Sn₂H₄) *J. Chem. Soc. Chem. Commun.* **1982**, 1407–1408.
- (396) Lappert, M. F.; Raston, C. L.; Skelton, B. W.; White, A. H. Crystalline Alkyl-Lithiums from α -Trimethylsilyl-substituted *ortho*-Xylenes - X-Ray Crystal-Structure of [(*o*-C₆H₄(CHSiMe₃)₂)(Li(Tmeda))₂] (Tmeda=Me₂NCH₂CH₂NMe₂). *J. Chem. Soc. Commun.* **1982**, 14–15.
- (397) Cetinkaya, B.; Hitchcock, P. B.; Lappert, M. F.; Thorne, A. J.; Goldwhite, H. Synthesis and Characterization of 2,4,6-Tri-*t*-butylphenylphosphines - X-Ray Structure of [P(C₆H₂Bu^{*t*}-2,4,6)S]₃. *J. Chem. Soc. Chem. Commun.* **1982**, 691–693.
- (398) Lappert, M. F.; Singh, A. Aspects of the Organometallic Chemistry of the Rare-Earths. *J. Less-Common Met.* **1983**, 94 (2), 401.
- (399) Lappert, M. F.; Singh, A.; Atwood, J. L.; Hunter, W. E. Metallocene(III) Tetrahydridoborates of the Group-3a Elements and the X-Ray Structure of [Sc[η -C₅H₃(SiMe₃)₂]₂(μ -H)₂BH₂]. *J. Chem. Soc. Commun.* **1983**, 206–207.
- (400) Hudson, A.; Lappert, M. F.; Pichon, R. An Electron-Spin-Resonance Study of the Photochemistry of Zirconocene(IV) Alkyls and Chlorides. *J. Chem. Soc. Chem. Commun.* **1983**, 374–376.
- (401) Fjeldberg, T.; Seip, R.; Lappert, M. F.; Thorne, A. J. The Molecular Structure of Gaseous Bis(trimethylsilyl)methane, CH₂(Si(CH₃)₃)₂, as determined by Electron-Diffraction - An Unusually Large Si-C-Si Angle. *J. Mol. Struct.* **1983**, 99, 295–302.
- (402) Lappert, M. F.; Slade, M. J.; Singh, A.; Atwood, J. L.; Rogers, R. D.; Shakir, R. Structure and Reactivity of Sterically Hindered Lithium Amides and their Diethyl Etherates - Crystal and Molecular Structures of [Li(N(SiMe₃)₂)(OEt₂)]₂ and [Li(NCMe₂CH₂CH₂CH₂CMe₂)]₄. *J. Am. Chem. Soc.* **1983**, 105, 302–304.
- (403) Hitchcock, P. B.; Lappert, M. F.; Singh, A. 3-Co-ordinate and 4-Co-ordinate, Hydrocarbon-Soluble Aryloxides of Scandium, Yttrium, and the Lanthanoids : X-Ray Crystal-Structure of Tris(2,6-di-*tert*-butyl-4-methylphenoxo)scandium. *J. Chem. Soc. Chem. Commun.* **1983**, 1499–1501.
- (404) Hitchcock, P. B.; Lappert, M. F.; Samways, B. J.; Weinberg, E. L. Metal (Li, Ge-II, Ge-III, Sn-II, and Pb-II) 2,6-Dialkylbenzenethiolates : X-Ray Crystal-Structures of

- $\text{Sn}(\text{SAr})_2$ ($\text{Ar} = \text{C}_6\text{H}_2\text{Bu}^{1-2,4,6}$) and $[\text{M}(\text{SAr}')_2]_3$ ($\text{M} = \text{Sn}$ or Pb , $\text{Ar}' = \text{C}_6\text{H}_3\text{Pr}^{1-2,6}$). *J. Chem. Soc. Chem. Commun.* **1983**, 1492–1494.
- (405) Cetinkaya, B.; Lappert, M. F.; Suffolk, R. J. Photoelectron Spectra of some Sterically Hindered Phenols and Related Compounds. *J. Chem. Res. (S)* **1983**, 316–317.
- (406) Hunter, W. E.; Atwood, J. L.; Lappert, M. F. The Crystal-Structure of $\text{Cp}''_2\text{UCl}_2$ ($\text{Cp}'' = [\text{C}_5\text{H}_3(\text{SiMe}_3)_2]^-$). *J. Less-Common Met.* **1983**, 94, 403.
- (407) Hitchcock, P. B.; Lappert, M. F.; Singh, A.; Taylor, R. G.; Brown, D. Hydrocarbon-soluble, Crystalline, 4-Co-ordinate Chloro(aryloxo)s, Dialkylamido(aryloxo)s, and Di[bis(trimethylsilyl)cyclopentadienyl]s of Th-IV and U-IV - X-Ray Crystal-Structure of Diethylamidotris(2,6-di-tert-butylphenoxy)uranium(IV). *J. Chem. Soc. Chem. Commun.* **1983**, 561–563.
- (408) Coleman, A. W.; Hitchcock, P. B.; Lappert, M. F.; Maskell, R. K.; Muller, J. H. Routes to Optically-Active Electron-Rich Olefins (L^*_2) and some Derived Carbenometal Complexes. X-Ray Structures of $[\text{Co}(\text{CO})(\text{L}^*)(\text{NO})(\text{PPh}_3)]$ and *cis*- $[\text{Rh}(\text{Cl})(\text{Cod})(\text{L}'^*)]$ [$\text{L}^* = (S)\text{-CN}(\text{Me})\text{CH}(\text{Me})\text{H}_2\text{NMe}$, $\text{L}'^* = (S)\text{-CN}(\text{CH}_2\text{CH}_2\text{CH}_2)\text{CHCH}_2\text{NMe}$, $\text{Cod} = 1,5\text{-C}_8\text{H}_{12}$] *J. Organomet. Chem.* **1983**, 250, C9-C14.
- (409) Cetinkaya, B.; Lappert, M. F.; Stamper, J. G.; Suffolk, R. J. The He(I) And He(II) Photoelectron-Spectra of Bis(2,4,6-tri-tert-butylphenyl)diphosphene. *J. Electron Spectros. Relat. Phenomena* **1983**, 32, 133–137.
- (410) Holton, J.; Lappert, M. F.; Pearce, R.; Yarrow, P. I. W. Bridged Hydrocarbyl or Hydrocarbon Binuclear Transition-Metal Complexes : Classification, Structures, and Chemistry. *Chem. Rev.* **1983**, 83, 135–201.
- (411) Fjeldberg, T.; Hope, H.; Lappert, M. F.; Power, P. P.; Thorne, A. J. Molecular-Structures of the Main Group 4 Metal(II) Bis(trimethylsilyl)amides $\text{M}[\text{N}(\text{SiMe}_3)_2]_2$ in the Crystal (X-Ray) and Vapour (Gas-Phase Electron-Diffraction). *J. Chem. Soc. Chem. Commun.* **1983**, 639–641.
- (412) Lappert, M. F.; Singh, A.; Atwood, J. L.; Hunter, W. E.; Zhang, H. M. Synthesis and Characterization of Stable Anionic Group-3a Dichlorometallocene(III) Complexes and the X-Ray Structure of $[\text{AsPh}_4][\text{Nd}[\eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_2]_2\text{Cl}_2]$. *J. Chem. Soc. Chem. Commun.* **1983**, 69–70.
- (413) Hitchcock, P. B.; Lappert, M. F.; Taylor, R. G. Synthesis, Chemical Behavior, and Structure (Crystal and Solution) of a Fluorouranocene(IV) Tetrafluoroborate : X-Ray Crystal-Structure of $[(\text{U}-\eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_2)(\mu\text{-BF}_4)(\mu\text{-F})_2]$. *J. Chem. Soc. Chem. Commun.* **1984**, 1082–1084.
- (414) Bristow, G. S.; Lappert, M. F.; Martin, T. R.; Atwood, J. L.; Hunter, W. F. Chemistry of *o*-Xylidine Metal-Complexes .2. Preparation and Properties of the *o*-Xylidine, Metal(IV) Complexes $[\text{M}(\text{CH}_2\text{C}_6\text{H}_4\text{CH}_2\text{-}o)(\eta\text{-C}_5\text{H}_4\text{R})_2]$ ($\text{M} = \text{Ti}$, Zr , Hf or Nb ; $\text{R} = \text{H}$ or SiMe_3 and $[(\text{M}'(\text{CH}_2\text{C}_6\text{H}_4\text{CH}_2\text{-}o)(\text{OC}_4\text{H}_8))_n]$ ($\text{M}' = \text{Ti}$, Zr , or Hf); X-ray Crystal

- Structures of the Metallaindanes $[M(\text{CH}_2\text{C}_6\text{H}_4\text{CH}_2\text{-}o)(\eta\text{-C}_5\text{H}_4\text{R})_2]$ (R = H, M = Ti, Zr, or Hf; R = SiMe₃, M = Nb) *J. Chem. Soc. Dalton Trans.* **1984**, , 399–413.
- (415) Atwood, J. L.; Fjeldberg, T.; Lappert, M. F.; Luong-thi, N. T.; Shakir, R.; Thorne, A. J. Molecular-Structures of Bis(trimethylsilyl)methyl-lithium $[(\text{LiR})_n, \text{R}=\text{CH}(\text{SiMe}_3)_2]$ in the Vapour (Gas-Phase Electron-Diffraction - A Monomer, n = 1) and the Crystal (X-Ray - A Polymer, n = Infinity). *J. Chem. Soc. Chem. Commun.* **1984**, 1163–1165.
- (416) Hitchcock, P. B.; Lappert, M. F.; Miles, S. J.; Thorne, A. J. Chemistry, including the X-Ray Structure, of Bis[bis(trimethylsilyl)methyl-germanium(II)], R_2GeGeR_2 [R = CH(SiMe₃)₂], A Stable Compound having a Metal Metal Double-Bond, A Dimetallene. *J. Chem. Soc. Chem. Commun.* **1984**, 480–482.
- (417) Fjeldberg, T.; Haaland, A.; Schilling, B. E. R.; Volden, H. V; Lappert, M. F.; Thorne, A. J. The Molecular-Structure of a Germene GeR_2 (R = GeCH(SiMe₃)₂) by Gas Electron-Diffraction - Self-Consistent-Field Molecular-Orbital Calculations on Stannene, SnH₂, and Distannene, Sn₂H₄. *J. Organomet. Chem.* **1984**, 276, C1--C4.
- (418) Cornish, A. J.; Lappert, M. F. Homogeneous Catalysis .9. Hydrosilylation using Tris(pentanedionato)rhodium(III)-Trialkylaluminium as Catalyst. *J. Organomet. Chem.* **1984**, 271, 153–168.
- (419) Lappert, M. F.; Raston, C. L.; Rowbottom, G. L.; Skelton, B. W.; White, A. H. Chemistry of *o*-Xylidene Metal Complexes .3. Tungsten *o*-Xylidene Complexes derived from Tetrachloro(oxo)Tungsten(VI) - X-Ray Crystal-Structures of $[\text{W}(\text{CH}_2\text{C}_6\text{H}_4\text{CH}_2\text{-}o)_3].0.5\text{C}_6\text{H}_6$ and $[(\text{W}(\text{CH}_2\text{C}_6\text{H}_4\text{CH}_2\text{-}o)_2\text{O})_2\text{Mg}(\text{C}_4\text{H}_8\text{O})_4]$. *J. Chem. Soc. Dalton Trans.* **1984**, 883–891.
- (420) Fjeldberg, T.; Lappert, M. F.; Thorne, A. J. The Molecular Structure of Dimeric Bis(trimethylsilyl)amidolithium, $[\text{Li}(\mu\text{-N}(\text{Si}(\text{CH}_3)_3)_2)_2]$, as Determined by Gas-Phase Electron-Diffraction. *J. Mol. Struct.* **1984**, 125, 265–275.
- (421) Lappert, M. F.; Maskell, R. K. Homogeneous Catalysis .8. Carbene-Transition-Metal Complexes as Hydrosilylation Catalysts. *J. Organomet. Chem.* **1984**, 264, 217–228.
- (422) Antinolo, A.; Lappert, M. F.; Winterborn, D. J. W. High Yield Syntheses and Characterization of a New Zirconocene(II) Dicarbonyl $[\text{Zr}(\eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_2)_2(\text{CO})_2]$, A Convenient Precursor to Various Zirconocene(II or IV) Complexes. *J. Organomet. Chem.* **1984**, 272, C37--C39.
- (423) Lappert, M. F.; Raston, C. L.; Skelton, B. W.; White, A. H. Chemistry of *o*-Xylidene Metal-Complexes .4. Stereospecific Synthesis of the Early Transition-Metal *meso*-Metallacycles $[\text{M}(\text{CH}(\text{SiMe}_3)\text{C}_6\text{H}_4\text{CHSiMe}_3\text{-}o)(\eta\text{-C}_5\text{H}_5)_2]$ (M = Ti, Zr, Hf, or Nb). Their Reversible One-Electron Reduction (M = Ti, Zr, Hf, or Nb) and Oxidation (M = Nb). *J. Chem. Soc. Dalton Trans.* **1984**, 893–902.
- (424) Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F.; Williams, H. D. Unusual, Thermally Stable, Sublimable Aminoboranes $\text{B}(\text{NHAr})\text{X}_2$ (X = Cl, F, or NH₂) : X-Ray Crystal-Structure of Bis(amino)(2,4,6-tri-tert-butylphenylamino)borane, $\text{B}(\text{NH}_2)_2(\text{NHAr})$. *J. Chem. Soc. Chem. Commun.* **1984**, 662–664.

- (425) Cetinkaya, B.; Hitchcock, P. B.; Lappert, M. F.; Misra, M. C.; Thorne, A. J. Metal Secondary Amides Derived from the Highly Hindered 2,4,6-Tri-tert-butylaniline : X-Ray Crystal-Structure of *trans*-[Li(μ -NHC₆H₂Bu^t₃-2,4,6)(OEt₂)₂]. *J. Chem. Soc. Chem. Commun.* **1984**, 148–149.
- (426) Doyle, M. J.; Lappert, M. F.; Pye, P. L.; Terreros, P. Carbene Complexes .18. Synthetic Routes to Electron-Rich Olefin-derived Monocarbenerhodium(I) Neutral and Cationic Complexes and their Chemical and Physical-Properties. *J. Chem. Soc. Dalton Trans.* **1984**, 2355–2364.
- (427) Lappert, M. F.; Singh, A.; Engelhardt, L. M.; White, A. H. X-Ray Structure of a Derivative of the Simplest Metallocene - Cyclopentadienyllithium, [Li(η -C₅H₄(SiMe₃))(NMe₂(CH₂)₂NMe₂)] (i.e. LiCp'(TMEDA)). *J. Organomet. Chem.* **1984**, 262, 271–278.
- (428) Fjeldberg, T.; Hitchcock, P. B.; Lappert, M. F.; Thorne, A. J. Unusual Molecular-Structures of some Sterically Hindered Lithium Amides. Electron-Diffraction Results on Gaseous [Li(N(SiMe₃)₂)₂] and X-Ray Data on Crystalline Monomeric Li(NHAr)(Tmeda) (Ar = C₆H₂Bu^t₃-2,4,6 Tmeda = Me₂NCH₂CH₂NMe₂). *J. Chem. Soc. Chem. Commun.* **1984**, 822–824.
- (429) Hitchcock, P. B.; Lappert, M. F.; Power, P. P.; Smith, S. J. Synthesis, Structure, and Reactivity of a μ -Bis(dialkylphosphido)dilithium [Li(μ -PR₂)₂] [R = CH(SiMe₃)₂]. *J. Chem. Soc. Chem. Commun.* **1984**, 1669–1670.
- (430) Fjeldberg, T.; Hitchcock, P. B.; Lappert, M. F.; Smith, S. J.; Thorne, A. J. Chemistry of Bulky Alkoxides of Bivalent Germanium and Tin - Structures of Gaseous [Sn(OBu^t)₂] and Crystalline Ge(OCBu^t)₂. *J. Chem. Soc. Commun.* **1985**, 939–941.
- (431) Hitchcock, P. B.; Jasim, H. A.; Kelly, R. E.; Lappert, M. F. Unusual Group-14 Metal Thiolates and Sulfides derived from Tris(trimethylsilyl)methanethiol - X-Ray Structures of [Pb(N(SiMe₃)₂(μ -SCR₃))₂] and *cis*-[Ge(CH₂Ph)(N(SiMe₃)₂)(μ -S)]₂. *J. Chem. Soc. Chem. Commun.* **1985**, 1776–1778.
- (432) Hawkins, S. M.; Hitchcock, P. B.; Lappert, M. F. Neutral η -Arene Complexes of Rhodium(I). X-Ray Structure of η -Toluene(η -cyclo-octene)[bis(bis(trimethylsilyl)amido)chlorostannate(II)]Rhodium(I). *J. Chem. Soc. Chem. Commun.* **1985**, 1592–1593.
- (433) Hitchcock, P. B.; Lappert, M. F.; Misra, M. C. Homoleptic, 3-Coordinate Group 8c Noble Metal(0) Complexes having GeII or SnII Ligands, [M(M'(NR₂)₂)₃] (M = Pd or Pt, M' = Ge or Sn, R = SiMe₃), and the X-Ray Structure of one of them (M = Pd, M' = Sn). *J. Chem. Soc. Chem. Commun.* **1985**, 863–864.
- (434) Campbell, G. K.; Hitchcock, P. B.; Lappert, M. F.; Misra, M. C. Heterobimetallic (Pd/Pt-Ge/Sn) Trinuclear Clusters Containing a Planar M₃(CO)₃(μ^2 -M')₃ Core. Spectroscopy, Cyclic Voltammetry, and Electron-Spin-Resonance Characterization of Electrochemical Reduction Products - Crystal-Structures of [(Pd(μ_2 Sn(NR₂)₂)(CO)₃)]₂ (M = Pd or Pt R = SiMe₃). *J. Organomet. Chem.* **1985**, 289, C1--C4.

- (435) Lappert, M. F.; Raston, C. L.; Engelhardt, L. M.; White, A. H. Stereospecific Synthesis of a Metallo-enolate - E -[Zr(OC(SiMe₃)=CH(CHAR)Cl(η-C₅H₅)₂)] (Structurally Characterized) via Carbonylation of [Zr(CH(SiMe₃)(Ar)Cl(η-C₅H₅)₂)] (Ar = 9-Anthryl) *J. Chem. Soc. Chem. Commun.* **1985**, 521–522.
- (436) Fjeldberg, T.; Lappert, M. F.; Thorne, A. J. The Molecular-Structure of Gaseous, Monomeric Bis(trimethylsilyl)methyl-lithium, LiCH(Si(CH₃)₃)₂, as determined by Electron Diffraction. *J. Mol. Struct.* **1985**, 127, 95–105.
- (437) Fjeldberg, T.; Haaland, A.; Schilling, B. E. R.; Volden, H. V.; Lappert, M. F.; Thorne, A. J. The Molecular Structure of a Germene Ge(CH(SiMe₃)₂)₂ by Gas Electron-Diffraction. Self Consistent Field Molecular Orbital Calculations on Stannene, SnH₂, and Distannene, Sn₂H₄. *J. Organomet. Chem.* **1985**, 280, C43--C46.
- (438) Alallaf, T. A. K.; Eaborn, C.; Hitchcock, P. B.; Lappert, M. F.; Pidcock, A. The Role of Bivalent Tin Compounds in Platinum Coordination Chemistry - X-Ray Structures of [Pt(Sn(NR'₂)₂)₃], *trans*-[Pt(μ-Cl)(PEt₃)(SnCl(NR'₂)₂)₂], and (SnClR₂)₂ [R = CH(SiMe₃)₂, R' = SiMe₃]. *J. Chem. Soc. Chem. Commun.* **1985**, 548–550.
- (439) Duff, A. W.; Hitchcock, P. B.; Lappert, M. F.; Taylor, R. G.; Segal, J. A. Dibutylmagnesium, a Convenient Reagent for the Synthesis of Useful Organic Magnesium Reagents MgA₂ including Cyclopentadienyls, Aryloxides, and Amides - Preparation of Zr(η-C₅H₅)Cl₃. X-Ray Structure of [Mg(μ-N(SiMe₃)₃)C₆H₄N(SiMe₃)-*o*](OEt₂)₂. *J. Organomet. Chem.* **1985**, 293, 271–283.
- (440) Coleman, A. W.; Hitchcock, P. B.; Lappert, M. F.; Maskell, R. K.; Muller, J. H. Carbene Complexes .19. Optically Active Electron-rich Olefin-derived Carbene-Transition Metal Complexes. Crystal Structures of [RhCl(COD)(C₇H₁₂N₂)], [RhCl(COD)(C₉H₁₆N₂)], [RhCl(PPh₃)₂(C₉H₁₈N₂)] and [Co(CO)(NO)(PPh₃)(C₆H₁₂N₂)]. *J. Organomet. Chem.* **1985**, 296, 173–196.
- (441) Lappert, M. F.; Power, P. P. Subvalent Group 4b Metal Alkyls and Amides .7. Transition-Metal Chemistry of Metal(II) Bis(trimethylsilyl)amides Ge[N(SiMe₃)₂]₂, Sn[N(SiMe₃)₂]₂, Pb[N(SiMe₃)₂]₂. *J. Chem. Soc. Dalton Trans.* **1985**, 51–57.
- (442) Lappert, M. Heavy Atom Main Group 4 Analogues of Carbenes, Radicals and Alkenes: The use of Bulky Trimethylsilyl-substituted Ligands. In *Silicon, Germanium Tin and Lead Compounds* **1986**, 9, 129. See also Z Rappoport Ed *The Chemistry of Organic Germanium, Tin, and Lead Compounds Vol 2* Wiley **2002**
- (443) Henderson, M. J.; Papasergio, R. I.; Raston, C. L.; White, A. H.; Lappert, M. F. Syntheses and Structures of Highly Hindered *N*-Functionalized Alkyl Group 2 Metal Complexes [M(NC₅H₄C(SiMe₃)₂₋₂)₂] (M = Mg, Zn, Cd, or Hg). *J. Chem. Soc. Chem. Commun.* **1986**, 672–674.
- (444) Goldwhite, H.; Kaminski, J.; Millhauser, G.; Ortiz, J.; Vargas, M.; Vertal, L.; Lappert, M. F.; Smith, S. J. Phosphorus-Phosphorus Single or Double-Bond Formation from PCl_{3-n}R_n (n = 1 or 2) and a Bisimidazolidine Reducing Agent. *J. Organomet. Chem.* **1986**, 310, 21–25.

- (445) Hitchcock, P. B.; Lappert, M. F.; Thomas, S. A.; Thorne, A. J.; Carty, A. J.; Taylor, N. J. Carbene Complexes .20. Electron-Rich Carbeneiron(0) Trigonal Bipyramidal Carbonyls and their Germanium(II) and Tin(II) Analogs $[\text{Fe}(\text{CO})_3(\text{L})(\text{L}')]$ ($\text{L} = \text{CN}(\text{Me})(\text{CH}_2)_2\text{NMe}$, $\text{L}' = \text{PEt}_3$, 3 COs equatorial - or $\text{L} = \text{M}(\text{OAr})_2$ (equatorial) $\text{M} = \text{Ge}$ or Sn , $\text{Ar} = \text{C}_6\text{H}_2\text{Bu}^t_{2-2,6}\text{-Me-4}$. *J. Organomet. Chem.* **1986**, 315, 27–44.
- (446) Goldberg, D. E.; Hitchcock, P. B.; Lappert, M. F.; Thomas, K. M.; Thorne, A. J.; Fjeldberg, T.; Haaland, A.; Schilling, B. E. R. Subvalent Group-4b Metal Alkyls and Amides .9. Germanium and Tin Alkene Analogues, The Dimetallenes M_2R_4 [$\text{M} = \text{Ge}$ or Sn , $\text{R} = \text{CH}(\text{SiMe}_3)_2$]. X-Ray Structures, Molecular-Orbital Calculations for M_2H_4 , and Trends in the series $\text{M}_2\text{R}'_4$ [$\text{M} = \text{C}$, Si , Ge , or Sn ; $\text{R}' = \text{R}$, Ph , $\text{C}_6\text{H}_2\text{Me}_3\text{-2,4,6}$ or $\text{C}_6\text{H}_3\text{Et}_2\text{-2,6}$]. *J. Chem. Soc. Dalton Trans.* **1986**, 2387–2394.
- (447) Hitchcock, P. B.; Lappert, M. F.; Rai, A. K.; Williams, H. D. Novel Arylimides of Phosphorus(III) and Arsenic(III) [The Arsazene being the first stable Compound =Containing an $\text{As}^{\text{III}}\text{N}$ Double-Bond]. X-Ray Structures of $\text{E}(=\text{NAr})(\text{NHAr})$ ($\text{E} = \text{P}$ or As , $\text{Ar} = \text{C}_6\text{H}_2\text{Bu}^t_{3-2,4,6}$). *J. Chem. Soc. Chem. Commun.* **1986**, 1633–1634.
- (448) Fjeldberg, T.; Lappert, M. F.; Smith, S. J. The Molecular-Structure of Di-tert-butylamine, $\text{NH}[\text{C}(\text{CH}_3)_3]_2$, as determined by Gas-Phase Electron-Diffraction. An Exceptionally Sterically Hindered Amine. *J. Mol. Struct.* **1986**, 140, 209–217.
- (449) Fjeldberg, T.; Haaland, A.; Schilling, B. E. R.; Lappert, M. F.; Thorne, A. J. Subvalent Group 4b Metal Alkyls and Amides .8. Germanium and Tin Carbene Analogs MR_2 [$\text{M} = \text{Ge}$ or Sn , $\text{R} = \text{CH}(\text{SiMe}_3)_2$]. Syntheses and Structures in the Gas-Phase (Electron-Diffraction) - Molecular-Orbital Calculations for MH_2 and GeMe_2 . *J. Chem. Soc. Dalton Trans.* **1986**, 1551–1556.
- (450) Hawkins, S. M.; Hitchcock, P. B.; Lappert, M. F.; Rai, A. K. Iridium(III) Hydrides derived from an Iridium(I) Substrate by Oxidative Addition and Cyclometallation of Germanium(II) Bis(trimethylsilyl)amide. X-Ray Structures of $[(\text{CH}_2\text{Me}_2\text{SiN}(\text{R})(\text{NR}_2)\text{Ge})\text{H}(\mu\text{-Cl})_2(\text{Ge}(\text{NR}_2)\text{N}(\text{R})\text{SiMe}_2\text{CH}_2)\text{IrH}(\text{Ge}(\text{NR}_2)_2)]$ and $[\text{Ir}(\text{GeCl}(\text{NR}_2)\text{N}(\text{R})\text{SiMe}_2\text{CH}_2)(\text{CO})_2\text{HGe}(\text{NR}_2)_2]$. ($\text{R} = \text{SiMe}_3$). *J. Chem. Soc. Chem. Commun.* **1986**, 1689–1690.
- (451) Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F.; Williams, H. D. Phosphorus(III and V)- and Arsenic(III)-Nitrogen Metallacycles derived from the Bulky Arylamido Ligand NHAr ($\text{Ar} = \text{C}_6\text{H}_2\text{Bu}^t_{3-2,4,6}$). X-Ray Structures of $\text{ArNPN}(\text{Ar})\text{AlMe}_2$ and $\text{PAr}(\text{NHAr})_2$. *J. Chem. Soc. Chem. Commun.* **1986**, 1634–1636.
- (452) Duff, A. W.; Kamarudin, R. A.; Lappert, M. F.; Norton, R. J. Bulky Metal Aryloxides, Arylamides, and Sulfur and Phosphorus Analogues .1. Synthetic and Chemical Studies of Titanium and Zirconium Aryloxides. *J. Chem. Soc. Dalton Trans.* **1986**, 489–498.
- (453) Engelhardt, L. M.; Harrowfield, J. M.; Lappert, M. F.; MacKinnon, I. A.; Newton, B. H.; Raston, C. L.; Skelton, B. W.; White, A. H. Highly Hindered $\gamma\text{-P}^{\text{III}}$ -functionalized Alkoxo-lithium Complexes. Syntheses and Structures of $[\text{Li}(\mu\text{-OCBu}^t_2\text{CH}_2\text{PMe}_2)]_2$, $[\text{Li}(\mu\text{-OCBu}^t_2\text{CH}_2\text{PPh}_2)]_2$ and $[\text{Li}(\mu\text{-OCBu}^t_2\text{CH}_2\text{PPh}_2)_2\text{Li}(\text{OCBu}^t_2)]$. *J. Chem. Soc. Chem. Commun.* **1986**, 846–848.

- (454) Blake, P. C.; Lappert, M. F.; Atwood, J. L.; Zhang, H. M. The Synthesis and Characterization, including X-Ray-Diffraction Study, of $[\text{Th}(\eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_2)_3]$. The first Thorium(III) Crystal-Structure. *J. Chem. Soc. Chem. Commun.* **1986**, 1148–1149.
- (455) Blake, P. C.; Lappert, M. F.; Taylor, R. G.; Atwood, J. L.; Hunter, W. E.; Zhang, H. M. A Complete Series of Uranocene(III) Halides $[(\text{UCp}''_2\text{X})_n]$ $[\text{X} = \text{F}, \text{Cl}, \text{Br}, \text{or I}, \text{Cp}'' = \eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_2]$. Single-Crystal X-Ray Structure Determinations of the Chloride and Bromide ($n = 2$ for $\text{X}^- = \mu\text{-Cl}^-$ or $\mu\text{-Br}^-$). *J. Chem. Soc. Chem. Commun.* **1986**, 1394–1395.
- (456) Anderson, D. M.; Bristow, G. S.; Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F.; Skelton, B. W. Carbene Complexes 21. Synthesis and Characterization of Bis(carbene)molybdenum(II) Complexes and Dimetal(0) Complexes of the Group-6 Elements Containing Novel Bridging Bis(carbene) Ligands. X-Ray Structures of $[\text{Mo}(\text{CO})_2(\text{L}^{\text{Et}})_2(\text{OSO}_2\text{CF}_3)_2]$ $[\text{L}^{\text{Et}} = =\text{CN}(\text{Et})(\text{CH}_2)_2\text{NEt}]$ and $\text{W}(\text{CO})_5[\text{C}(\text{OEt})\text{CH}_2\text{C}_6\text{H}_4\text{CH}_2\text{C}(\text{OEt})\text{-}o]\text{W}(\text{CO})_5$. *J. Chem. Soc. Dalton Trans.* **1987**, 2843–2851.
- (457) Antinolo, A.; Lappert, M. F.; Singh, A.; Winterborn, D. J. W.; Engelhardt, L. M.; Raston, C. L.; White, A. H.; Carty, A. J.; Taylor, N. J. Metallocene Derivatives of Early Transition-Elements .4. Synthesis and Crystal-Structures of a series of Zirconocene(IV) Halides $[\text{Zr}(\eta\text{-C}_5\text{H}_4\text{SiMe}_3)_2\text{Cl}_2]$, $[\text{Zr}(\eta\text{-C}_5\text{H}_4\text{SiMe}_3)_2\text{Br}_2]$ and $[\text{Zr}(\eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_{2-1,3})_2\text{X}_2]$, ($\text{X} = \text{F}, \text{Cl}$ or Br). *J. Chem. Soc. Dalton Trans.* **1987**, 1463–1472.
- (458) Blake, P. C.; Lappert, M. F.; Taylor, R. G.; Atwood, J. L.; Zhang, H. M. Some Aspects of the Coordination and Organometallic Chemistry of Thorium and Uranium (M^{III} , M^{IV} , U^{V}) in +3 and +4 Oxidation-States. *Inorg. Chim. Acta* **1987**, 139, 13–20.
- (459) Anderson, D. M.; Hitchcock, P. B.; Lappert, M. F.; Leung, W. P.; Zora, J. A. 2 Crystalline Toluene-soluble 1,2-Organobis(phenylphosphido)dilithium Compounds - The Monomeric 1,2- $\text{C}_6\text{H}_4(\text{PPh})_2[\text{Li}(\text{tmeda})_2]$ and the Dimeric $[(\text{PhPCH}_2\text{CH}_2\text{PPh})(\text{Li}(\text{thf})_2)_2]_2$. *J. Organomet. Chem.* **1987**, 333, C13--C17.
- (460) Lappert, M. F.; Misra, M. C.; Onyszczuk, M.; Rowe, R. S.; Power, P. P.; Slade, M. J. Subvalent Group-14 Metal-Compounds .11. Oxidative Addition-Reactions of Organic Halides or Acid Anhydrides (including $\text{CH}_{4-n}\text{Cl}_n$, PhBr , $\text{BrN}(\text{SiMe}_3)_2$, Bu^tCOCl , or $(\text{CF}_3\text{CO})_2\text{O}$) to some Bivalent Group-14 Metal Amides or Alkyls. *J. Organomet. Chem.* **1987**, 330, 31–46.
- (461) Hey, E.; Hitchcock, P. B.; Lappert, M. F.; Rai, A. K. Bis(trimethylsilyl)phosphidometal Complexes .1. Isolation and NMR-Spectra of $\text{Li}_4(\mu\text{-PR}_2)_2(\mu_3\text{-PR}_2)_2(\text{THF})_2$ (I), $\text{Li}(\text{PR}_2)(\text{PMDETA})$ (II), and X-ray structures of compound I and $[\text{Li}(\mu\text{-PR}_2)(\text{THF})_2]$ (III), $\text{R} = \text{SiMe}_3$. *J. Organomet. Chem.* **1987**, 325 1–12.
- (462) Hey, E.; Lappert, M. F.; Atwood, J. L.; Bott, S. G. Bis(trimethylsilyl)phosphinodithioformates, The Phosphorus Analogues of Dithiocarbamates X-Ray Structures of $[\text{Zr}(\text{Cp})_2(\text{Cl})(\eta^2\text{-S}_2\text{CP}(\text{SiMe}_3)_2)]$ and its Thermolysis Product $[\text{Zr}(\eta\text{-C}_5\text{H}_5)_2(\mu\text{-S})_2]$. $\text{Cp} = \eta\text{-C}_5\text{H}_5$. *J. Chem. Soc. Chem. Commun.* **1987**, 421–422.

- (463) Hitchcock, P. B.; Lappert, M. F.; Michalczyk, M. J. Subvalent Group 14 Metal-Compounds .10. Syntheses and Structures of some Bis(metallo)plumbylenes [Pb(Mo(R)(CO)₃)₂(OC₄H₈)], [R = η-C₅H₅, η-C₅H₃(SiMe₃)₂-1,3, or η-C₅Me₅]. X-Ray Crystal-Structures of [Pb(Mo(η-C₅Me₅)(CO)₃)₂(OC₄H₈)] and [{Pb[Mo(η-C₅Me₅)(CO)₃][Mo(η-C₅Me₅)(CO)₂(μ-CO)]]₂. *J. Chem. Soc. Dalton Trans.* **1987**, 2635–2642.
- (464) Hey, E.; Lappert, M. F.; Atwood, J. L.; Bott, S. G. A Hexaphosphorus Chain as Part of a Dimeric P,P'-containing Ligand. 1,3-Phosphozirconation of White Phosphorus. X-Ray Structure of [Zr(η-C₅H₅)₂(P(Pr₂)PP(Pr₂)P)] (R=SiMe₃). *J. Chem. Soc. Chem Commun.* **1987**, 597–598.
- (465) Cloke, F. G. N.; Lappert, M. F.; Lawless, G. A.; Swain, A. C. Synthesis of Bis(η-1,3,5-tri-t-butylbenzene) Sandwich Complexes of Titanium, Zirconium, and Hafnium, and of the Hafnium(0) Carbonyl Complex [Hf(η-Bu^t₃C₆H₃)₂(CO)]. *J. Chem. Soc. Chem. Commun.* **1987**, 1667–1668.
- (466) Hitchcock, P. B.; Lappert, M. F.; Smith, R. G. Tris(2,6-di-t-butylphenoxo)yttrium - A 3-Coordinate Hydrocarbon-soluble Aryloxo of Yttrium. *Inorg. Chim. Acta* **1987**, 139, 183–184.
- (467) Chandra, G.; Lo, P. Y.; Hitchcock, P. B.; Lappert, M. F. A Convenient and Novel Route to Bis(η-alkyne)platinum(0) and other Platinum(0) Complexes from Speier's Hydrosilylation Catalyst H₂[PtCl₆].xH₂O. X-Ray Structure of [Pt((η-CH₂=CHSiMe₂)₂O)(P^tBu₃)]. *Organometallics* **1987**, 6, 191–192.
- (468) Hitchcock, P. B.; Lappert, M. F.; Leung, W. P. The first Stable Transition-Metal (Molybdenum or Tungsten) Complexes having a Metal Phosphorus(III) Double-Bond. The Phosphorus Analogues of Metal Aryl-Imides and Alkyl-Imides - X-Ray Structure of [Mo(η-C₅H₅)₂(=PC₆H₂Bu^t₃-2,4,6)]. *J. Chem. Soc. Chem. Commun.* **1987**, 1282–1283.
- (469) Harvey, S.; Raston, C. L.; Skelton, B. W.; White, A. H.; Lappert, M. F.; Srivastava, G. Trimethylsilylcyclopentadienylthallium(I) Complexes. Syntheses and X-Ray Structures of the Multidecker Sandwich Complexes [Tl(μ-η-η-C₅H₄SiMe₃)₂N] and [Tl(μ-η-η-C₅H₃(SiMe₃)₂-1,3)]₆ (A Doughnut Molecule). *J. Organomet. Chem.* **1987**, 328, C1--C6.
- (470) Hitchcock, P. B.; Lappert, M. F.; Smith, S. J. Synthesis, Structure, and Reactions of the First Homoleptic Lithium-Arsenic Compound, [Li(μ-AsR₂)₃] (R = CH(SiMe₃)₂). *J. Organomet. Chem.* **1987**, 320, C27--C30.
- (471) Edelman, M. A.; Lappert, M. F. The Synthesis and X-Ray Structure of a Novel Monocyclopentadienyluranium(IV) Chloride [U-η-C₅H₂(SiMe₃)₃-1,2,4Cl₂(Thf)(μ-Cl)₂Li(Thf)₂]. *Inorg. Chim. Acta* **1987**, 139, 185–186.
- (472) Lappert, M. Aspects of Organometallic Free Radical Chemistry. In *Organic Free Radicals* H Fischer, H Heimgartner Eds *Aspects of Organometallic Free Radical Chemistry* Springer **1988**, 101.

- (473) Atwood, J. L.; Lappert, M. F.; Smith, R. G.; Zhang, H. M. 4-Co-ordinate Lanthanide Metal(III) Chloro(alkyl)s. Synthesis and X-Ray Structure of $[\text{LaR}_3(\mu\text{-Cl})\text{Li}(\text{pmdeta})]$ [$\text{R} = \text{CH}(\text{SiMe}_3)_2$, $\text{pmdeta} = \text{N,N,N}',\text{N}'',\text{N}'''$ -pentamethyldiethylenetriamine]. *J. Chem. Soc. Chem. Commun.* **1988**, 1308–1309.
- (474) Kot, W. K.; Shalimoff, G. V; Edelstein, N. M.; Edelman, M. A.; Lappert, M. F. $[\text{Th}^{\text{III}}(\eta^5\text{C}_5\text{H}_3(\text{SiMe}_3)_2)_3]$, An Actinide Compound with a $6d^1$ Ground-state. *J. Am. Chem. Soc.* **1988**, *110*, 986–987.
- (475) Engelhardt, L. M.; Jolly, B. S.; Lappert, M. F.; Raston, C. L.; White, A. H. The First Monomeric Crystalline Tin(II) Alkyls - X-Ray Structures of the β -N-Functionalized Alkyls $\text{Sn}(\text{R})\text{X}$ [$\text{R} = \text{C}(\text{SiMe}_3)_2\text{C}_5\text{H}_4\text{N}-2$ and $\text{X} = \text{R}, \text{Cl},$ or $\text{N}(\text{SiMe}_3)_2$]. *J. Chem. Soc. Chem. Commun.* **1988**, 336–338.
- (476) Gumrukcuoglu, I. E.; Jeffery, J.; Lappert, M. F.; Pedley, J. B.; Rai, A. K. Bonding Studies on Zinc, Cadmium, and Mercury Alkyls and Amides, $\text{Zn}(\text{CH}_2\text{EMe}_3)_2$ ($\text{E} = \text{C}$ or Si) and $\text{M}[\text{N}(\text{SiMe}_3)_2]_2$ ($\text{M} = \text{Zn}, \text{Cd},$ or Hg). Heats of Hydrolysis, Standard Heats of Formation, and Zn-C and M-N ($\text{M} = \text{Zn}, \text{Cd},$ or Hg) Bond-Energy Terms. *J. Organomet. Chem.* **1988**, *341*, 53–62.
- (477) Hey, E.; Lappert, M. F.; Atwood, J. L.; Bott, S. G. Insertion of Diphenyldiazomethane into $\text{Zr}(\eta\text{-C}_5\text{H}_5)_2(\text{Cl})\text{P}(\text{SiMe}_3)_2$. X-Ray Structures of $[\text{ZrCp}_2(\text{PR}_2)\text{Cl}]$, $[\text{ZrCp}_2(\text{PR}_2)\text{Me}]$ and $[\text{ZrCp}_2(\text{Cl})(\text{N}(\text{CpH}_2)\text{NPR}_2)]$. *Polyhedron* **1988**, *7*, 2083–2086.
- (478) Blake, P. C.; Hey, E.; Lappert, M. F.; Atwood, J. L.; Zhang, H. M. Bis(trimethylsilyl)phosphido Complexes .2. Bis(trimethylsilyl)phosphidobis(tetrahydrofuran)lithium as a Reducing Agent. X-Ray Structure of $[\text{UCp}''_2(\mu\text{-Cl})_2\text{Li}(\text{thf})_2]$ [$\text{Cp}'' = \eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_{2-1,3}$] [$\text{thf} = \text{OC}_4\text{H}_8$]. *J. Organomet. Chem.* **1988**, *353*, 307–314.
- (479) Hitchcock, P. B.; Lappert, M. F.; Mackinnon, I. A. Use of a Highly Hindered Phosphino-Alkoxide Ligand in the Formation of Monomeric Homoleptic Lanthanoid Metal Complexes. X-Ray Structures of $[\text{Y}(\text{OCBu}^t_2\text{CH}_2\text{PMe}_2)_3]$ [$\text{Nd}(\text{OCBu}^t_2\text{CH}_2\text{PMe}_2)_3$]. *J. Chem. Soc. Chem. Commun.* **1988**, 1557–1558.
- (480) Blake, P. C.; Lappert, M. F.; Atwood, J. L.; Zhang, H. M. A Series of Bis(η -cyclopentadienyl)uranium(III) Dichloro-bridged-Alkali-Metal and Dihalogenobis(η -cyclopentadienyl)uranate(III) Complexes. Single-Crystal X-Ray Structure Determination of $[\text{UCp}''_2(\mu\text{-Cl})_2\text{Li}(\text{pmdeta})]$ and $[\text{PPh}_4][\text{UCp}''_2\text{Cl}_2]$. [$\text{Cp}'' = \eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_{2-1,3}$; $\text{pmdeta} = (\text{Me}_2\text{NCH}_2\text{CH}_2)_2\text{NMe}$]. *J. Chem. Soc. Chem. Commun.* **1988**, 1436–1438.
- (481) Lappert, M. F., Colin Eaborn 65th Birthday Special Volume - Introduction. *J. Organomet. Chem.* **1988**, *341*, R11--R14.
- (482) Hitchcock, P. B.; Lappert, M. F.; Smith, R. G.; Bartlett, R. A.; Power, P. P. Synthesis and Structural Characterization of the First Neutral Homoleptic Lanthanide Metal(III) Alkyls - $[\text{LnR}_3]$ [$\text{Ln} = \text{La}$ or Sm , $\text{R} = \text{CH}(\text{SiMe}_3)_2$]. *J. Chem. Soc. Chem. Commun.* **1988**, 1007–1009.

- (483) Andersen, R. A.; Berg, D. J.; Fernholt, L.; Faegri, K.; Green, J. C.; Haaland, A.; Lappert, M. F.; Leung, W. P.; Rypdal, K. Monomeric, Base-Free Mn(II) Dialkyls - Synthesis, Magnetic Properties and Molecular Structure of MnR_2 [$R = CH(SiMe_3)_2$], SCF-MO Calculations on $Mn(CH_3)_2$ and Photoelectron Spectra of $Mn(CH_2CMe_3)_2$. *Acta Chem. Scand. Ser. A-Physical Inorg. Chem.* **1988**, *42*, 554–562.
- (484) McNaughton, D.; Romeril, N. G.; Lappert, M. F.; Kroto, H. W. The Microwave Spectra of 1-Cyanoprop-2-yne $HC=CCH_2CN$ and 1-Isocyanoprop-2-yne $HC=CCH_2NC$. *J. Mol. Spectrosc.* **1988**, *132*, 407–412.
- (485) Knuppel, P. C.; Pawelke, G.; Sommer, H.; Stelzer, O.; Oberhammer, H.; Lappert, M. F.; Suffolk, R. J.; Watts, J. D. Structural Studies (Gas Electron-Diffraction, Vibrational-Spectra, He(I) Photoelectron-Spectra (PES), and Molecular-Orbital Calculations) on Gaseous Methylenebis(phosphane), $CH_2(PH_2)_2$, and the PES of the Series $CH_2(PXY)_2$ ($XY = HMe, HPr^i, HBu^t, Me_2, Pr^iCl, Bu^tCl$ or Cl_2). *J. Organomet. Chem.* **1988**, *355*, 55–70.
- (486) Andersen, R. A.; Faegri, K.; Green, J. C.; Haaland, A.; Lappert, M. F.; Leung, W. P.; Rypdal, K. Synthesis of Bis[bis(trimethylsilyl)amido]iron(II) - Structure and Bonding in $Mn[N(SiMe_3)_2]_2$, $Fe[N(SiMe_3)_2]_2$, $Co[N(SiMe_3)_2]_2$ 2-Coordinate Transition-Metal Amides. *Inorg. Chem.* **1988**, *27* (10), 1782–1786.
- (487) Chamizo, J. A.; Hitchcock, P. B.; Lappert, M. F. Synthesis, X-Ray Characterization and Theoretical-Study of Pd-Carbene Complexes, derived from *ortho*-amides. *Abstr. Pap. Am. Chem. Soc.* **1988**, *195* (1), 367--Inorg.
- (488) Harvey, S.; Lappert, M. F.; Raston, C. L.; Skelton, B. W.; Srivastava, G.; White, A. H. Conversion of the Silicone Poly(dimethylsiloxane) by Thallium(I) Ethoxide into the Ladder Polymer $[(Tl_2(OSiMe_2)O)_2]_n$ - X-Ray Structure of the Product and of Thallium(I) Triphenylsilanolate. *J. Chem. Soc. Chem. Commun.* **1988**, 1216–1217.
- (489) Lappert, M. F. The Coordination Chemistry of Electron-Rich Alkenes (Enetetramines). *J. Organomet. Chem.* **1988**, *358*, 185–214.
- (490) Anderson, D. M.; Hitchcock, P. B.; Lappert, M. F.; Moss, I. Some Reactions of the Ethylenebis(phenylphosphido)dilithium Reagent $[(Li(thf)_2)_2(PhPCH_2CH_2-PPh)]_2$, and its X-Ray Structure. *Inorg. Chim. Acta* **1988**, *141*, 157–159.
- (491) Lappert, M. F.; McGeary, M. J.; Parish, R. V. Subvalent Group-14 Metal-Compounds .11. Complexes with Group-14 Metal Iron Bonds - The Synthesis and Characterization of the Complexes $[FeCp(CO)_2(M(X)R_2)]$ ($R = CH(SiMe_3)_2$, $Cp = \eta-C_5H_5$, $M = Sn$ and $X = H, F, Cl, Br, I, \text{ or } OMe$, or $M = Pb$ and $X = I$). *J. Organomet. Chem.* **1989**, *373*, 107–117.
- (492) Chamizo, J. A.; Lappert, M. F. [3,3]-Sigmatropic and [1,3]-Sigmatropic Amino-Claissen Rearrangements of Electron Rich Alkenes [1,3,1',3'-Tetraallyl-2,2'-Biimidazolidinylidenes]. *J. Org. Chem.* **1989**, *54*, 4684–4686.

- (493) Avent, A. G.; Edelman, M. A.; Lappert, M. F.; Lawless, G. A. The First High-Resolution Direct NMR Observation of an f-Block Element. *J. Am. Chem. Soc.* **1989**, *111*, 3423–3425.
- (494) Bohra, R.; Hitchcock, P. B.; Lappert, M. F.; Leung, W. P. Synthetic and Structural Studies on some Bis(cyclopentadienyl)molybdenum and -tungsten Complexes containing doubly bonded Tin or Phosphorus. *Polyhedron* **1989**, *8*, 1884.
- (495) Hitchcock, P. B.; Lappert, M. F.; Smith, R. G. Lanthanide Metal(III) Heteroleptic Alkyls. Synthesis of $[\text{LnR}_3(\mu\text{-Me})\text{Li}(\text{Pmdeta})]$ [$\text{Ln} = \text{La}$ or Sm , $\text{R} = (\text{CH}(\text{SiMe}_3)_2)$, $\text{Pmdeta} = \text{N}, \text{N}, \text{N}', \text{N}'', \text{N}'''$ -Pentamethyldiethylenetriamine] and X-Ray Structure of the Samarium Complex. *J. Chem. Soc. Chem. Commun.* **1989**, 369–371.
- (496) Beck, G.; Hitchcock, P. B.; Lappert, M. F.; MacKinnon, I. A. Lipophilic Lithium Alkoxides or Dialkylboroxides. X-Ray Structures of $[\text{Li}(\mu\text{-OR}')_2]$ and $\text{Li}(\text{OBR}_2)(\text{tmeda})$, [$\text{tmeda} = (\text{Me}_2\text{NCH}_2)_2$, $\text{R} = \text{CH}(\text{SiMe}_3)_2$, $\text{R}' = \text{C}_4\text{H}_9$ or BR_2]. *J. Chem. Soc. Chem. Commun.* **1989**, 1312–1314.
- (497) Jastrzebski, J.; Vankoten, G.; Lappert, M. F.; Blake, P. C.; Hankey, D. R. Cyclometallated Organolithium Compounds. *Inorg. Synth.* **1989**, *26*, 150–155.
- (498) Chamizo, J. A.; Lappert, M. F. $\text{N}, \text{N}', \text{N}'', \text{N}'''$ -Functionalized Electron-Rich Alkenes and their Role in Transition-Metal Chemistry. In *Advances In Metal Carbene Chemistry*; Schubert, U, Ed.; Nato Advanced Science Institutes Series, Series C, Mathematical And Physical Sciences; Kluwer Academic Publ: Dordrecht, 1989; Vol. 269, pp 47–58.
- (499) Antinolo, A.; Lappert, M. F.; Lawless, G. A.; Olivier, H. Aspects of the Chemistry of a Bulky Zirconocene(III) Chloride. *Polyhedron* **1989**, *8*, 1882.
- (500) Hitchcock, P. B.; Lappert, M. F.; McGeary, M. J. Conversion of Dithiocarbamate Ligands to an Aminoalkyne Ligand starting with $\text{W}(\text{S}_2\text{SNR}'_2)_2(\text{CO})_2(\text{SNR}_2)$. *Abstr. Pap. Am. Chem. Soc.* **1989**, *197*, 275--Inorg.
- (501) Hitchcock, P. B.; Lappert, M. F.; McGeary, M. J. Trimetallostannylenes Complexes, $(\text{LnM})_3\text{Sn}$. *Abstr. Pap. Am. Chem. Soc.* **1989**, *197*, 274--Inorg.
- (502) Lappert, M. F.; McGeary, M. J. Tin and Lead Malonate Derivatives. *Abstr. Pap. Am. Chem. Soc.* **1989**, *197*, 359--Inorg.
- (503) Deacon, G. B.; Hitchcock, P. B.; Holmes, S. A.; Lappert, M. F.; MacKinnon, P.; Newnham, R. H. 4-Co-ordinate and 5-Co-ordinate Lanthanide(II) Aryloxides - X-Ray Structures of the Bis(2,6-di-t-butyl-4-methylphenoxo)ytterbium(II) Complexes $[\text{Yb}(\text{OAr})_2(\text{L})_2]$ and $[\text{Yb}(\text{OAr})_2(\text{L}')_3]$ [$\text{Ar} = \text{C}_6\text{H}_3(\text{Bu}^t)_2-2,6\text{-Me-4}$, $\text{L} = \text{Tetrahydrofuran}(\text{Thf})$ or OEt_2 , $\text{L}' = \text{C}_5\text{H}_5$]. *J. Chem. Soc. Commun.* **1989**, 935–937.
- (504) Bohra, R.; Hitchcock, P. B.; Lappert, M. F.; Leung, W. P. Synthesis and Structures of the 1,3-Diphospha-2-metallapentanes $[\text{L}_n\text{M}(\text{P}(\text{Ph})\text{C}_6\text{H}_4\text{PPh})]$ [$\text{ML}_n = \text{ZrCp}''_2(2)$, *rac*- $\text{SnR}_2(3)$, SnMe_2 , or BAr ; $\text{Cp}'' = \eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_2-1,3$, $\text{R} = \text{CH}(\text{SiMe}_3)_2$, $\text{Ar} =$

- $C_6H_2(Bu-t)_3-2,4,6$ - X-Ray Structures of Complexes (2) And (3). *J. Chem. Soc. Chem. Commun.* **1989**, 728–730.
- (505) Lappert, M. F.; Leung, W. P.; Bartlett, R. A.; Power, P. P. Synthesis of some Low Oxidation-State Organotitanium Compounds. *Polyhedron* **1989**, 8, 1883.
- (506) Lappert, M. F.; Martin, T. R.; Raston, C. L.; Andersen, R. A. Main Group Metal (Li or Mg) *ortho*-Phenylenedimethyl [*ortho*- $C_6H_4(CH_2)_2$ or *ortho*- $C_6H_4(CH(SiMe_3))_2$] Transfer Reagents. *Inorg. Synth.* **1989**, 26, 144–150.
- (507) Antinolo, A.; Bristow, G. S.; Campbell, G. K.; Duff, A. W.; Hitchcock, P. B.; Kamarudin, R. A.; Lappert, M. F.; Norton, R. J.; Sarjudeen, N.; Winterborn, D. J. W.; Atwood, J. L., Hunter W. E., Zhang H. Synthetic and Structural Studies on some Organic-Compounds of Zirconium. *Polyhedron* **1989**, 8, 1601–1606.
- (508) Cetinkaya, B.; Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F. Synthesis and Properties of Chlorotris(1,3-Dibenzylimidazolidin-2-ylidene)rhodium(I) and of some related-Compounds. In *Advances In Metal Carbene Chemistry*; Schubert, U, Ed.; Nato Advanced Science Institutes Series, Series C, Mathematical And Physical Sciences; Kluwer Academic Publ: Dordrecht, 1989; Vol. 269, Pp 59–66.
- (509) Anderson, D. M.; Hitchcock, P. B.; Lappert, M. F. Synthesis, Characterization, and Crystal Structure of a Tetra(phosphino)ethene [$PhPCH_2CH_2P(Ph)C_2$]. *J. Organomet. Chem.* **1989**, 363, C7–C11.
- (510) Blake, P.; Lappert, M.; Taylor, R.; Hazin, P. N.; Bruno, J. W. Bis[$\eta^5-1,3$ -Bis(trimethylsilyl)cyclopentadienyl] Halouranium(IV) and -thorium(IV) [$MCp^*_2Cl_2$] and [$UCp^*_2X_2$]. *Inorg. Synth.* **1990**, 27, 172-177.
- (511) Lappert, M. F.; Singh, A.; Smith, R. G., Stecher, H. A., Sen, A. Hydrocarbon-soluble Homoleptic Bulky Aryl Oxides of the Lanthanide Metals [$Ln(OAr^R)_3$]. *Inorg. Synth.* **1990**, 27, 164-168.
- (512) Lappert, M.; Singh, Takats, J. Bis[$\eta-1,3$ -Bis(trimethylsilyl)-[cyclopentadienyl]chlorolanthanide(III) Complexes. *Inorg. Synth.* **1990**, 27, 168-172.
- (513) Chamizo, J. A.; Lappert, M. F. Theoretical and Practical Study of the Oxidation Products of the Electron Rich Olefins. *Afinidad XLVII* **1990** 426, 131–134.
- (514) Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F.; Williams, H. D. Bulky Metal Aryloxides, Arylamides and Sulfur and Phosphorus Analogues .3. Aluminum Compounds derived from 2,4,6-Tri-Tert-Butylaniline. X-Ray Structure of [$AlMe(\mu-NHC_6H_2(Bu^t)_2-4,6-C(Me)_2CH_2-2)_2$]. *Polyhedron* **1990**, 9, 245–251.
- (515) Vandenancker, T.; Jolly, B. S.; Lappert, M. F.; Raston, C. L.; Skelton, B. W.; White, A. H. Hypervalent Silicon via Intramolecular Coordination in a 4-Membered Ring-System: Synthesis and Structure of $SiCl_2X[2-C(SiMe_3)_2C_5H_4N]$ (X = H or Me) - X-Ray Structures of the Former Complex and of $SiCl_2Me(2-CPh_2C_5H_4N)$. *J. Chem. Soc. Chem. Commun.* **1990**, 1006–1008.

- (516) Lappert, M. F.; Rowe, R. S. The Role of Group 14 Element Carbene Analogues in Transition-Metal Chemistry. *Coord. Chem. Rev.* **1990**, *100*, 267–292.
- (517) Cetinkaya, B.; Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F.; Williams, H. D. Butyl Metal Aryloxides, Arylamides, and Sulfur and Phosphorus Analogues .2. Synthesis and Characterization of Novel Bulky Alkoxides and Aryloxides of Aluminum. X-Ray Structure of $[Al(\mu-OCH_2Ar)Me_2]_2$ Ar = $C_6H_2Bu^t_{3-2,4,6}$. *Polyhedron* **1990**, *9*, 239–243.
- (518) Hitchcock, P. B.; Lappert, M. F.; Leung, W. P.; Buttrus, N. H. Silylmethyl and Related Complexes .8. Bis[bis(trimethyl)silylmethyl]manganese(II): its Synthesis, Properties, and Crystal-Structures of its Tetrahydrofuran and Bis(dimethylphosphino)ethane Adducts. *J. Organomet. Chem.* **1990**, *394*, 57–67.
- (519) Hitchcock, P. B.; Lappert, M. F.; McGeary, M. J. Dimetallostannylene Transition-Metal Complexes. *Organometallics* **1990**, *9*, 884–886.
- (520) Hitchcock, P. B.; Lappert, M. F.; McGeary, M. J. Stannadesulfurization of a Bis(diethyldithiocarbamato)tungsten(II) Complex - Formation of an (Aminocarbyne)tungsten Complex. *Organometallics* **1990**, *9*, 2645–2646.
- (521) Edelman, M. A.; Hitchcock, P. B.; Lappert, M. F. Unusual Kinetically Stable Dialkyltin(IV) Oxides. -X-Ray Structures of $[(SnR_2(\mu-O))_2]$ and $[(SnR_2(OH))_2(\mu-O)]$ [R = $CH(SiMe_3)_2$]. *J. Chem. Soc. Chem. Commun.* **1990**, 1116–1118.
- (522) Avent, A. G.; Lappert, M. F.; Skelton, B.; Raston, C. L.; Engelhardt, L. M.; Harvey, S.; White, A. H. Synthesis and Structures of some Novel Organic-Compounds Containing Boron and Phosphorus. In *Heteroatom Chemistry*, Block, E, Ed.; V C H Publishers: New York, **1990**; pp 275–285.
- (523) Hitchcock, P. B.; Howard, J. A. K.; Lappert, M. F.; Leung, W. P.; Mason, S. A. The First Example of an Intermolecular Weak (Agostic) γ -Methyl Metal Interaction - The Low-Temperature Single-Crystal X-Ray and Neutron-Diffraction Structure of MgR_2 [R = $CH(SiMe_3)_2$] *J. Chem. Soc. Chem. Commun.* **1990**, 847–849.
- (524) Hitchcock, P. B.; Lappert, M. F.; McGeary, M. J. Stannadesulfurization of a Bis(dimethyldithiocarbamato)tungsten(II) Complex - Formation of a Coordinated $Me_2NCCNMe_2$ Complex. *J. Am. Chem. Soc.* **1990**, *112*, 5658–5660.
- (525) Hitchcock, P. B.; Lappert, M. F.; Thorne, A. J. Novel 2-Coordinate Germanium(II) Arylamides: $Ge(NHAr)_2$, $ArN[Ge(NHAr)]_2(\mu-NAr)$ and $[Ge(\mu-NAr)]_2$ (**2**) and the X-Ray Structures of **2** and $Sn(NHAr)_2$. Ar = $C_6H_2Bu^t_{3-2,4,6}$] *J. Chem. Soc. Chem. Commun.* **1990**, 1587–1589.
- (526) Hitchcock, P. B.; Lappert, M. F.; Lawless, G. A.; Royo, B. The Synthesis and Structure of the Alkaline-Earth Metal Organic-Compounds $[M(OAr)_2(thf)_n]$ [M = Ca, n = 3 (**1**) or 0 ; M = Ba, n = 4] and $[(Ca(NR_2)(\mu-NR_2)(thf))_2]$, and the X-Ray Structure of (**1**) (Ar = $C_6H_2Bu^t_{2-2,6-Me-4}$; R = $SiMe_3$; thf = OC_4H_8). *J. Chem. Soc. Chem. Commun.* **1990**, 1141–1142.

- (527) Hitchcock, P. B.; Lappert, M. F.; Prashar, S. Organolanthanide Hydroxides - The Synthesis and Crystal-Structures of the Samarocene and Ytterbocene Hydroxides $[(\text{SmCp}''_2(\mu\text{-OH}))_2]$ and $[(\text{YbCp}''_2(\mu\text{-OH}))_2]$ [$\text{Cp}'' = \eta^5\text{-C}_5\text{H}_3(\text{SiMe}_3)_{2-1,3}$ $\text{Cp}'' = \eta^5\text{-C}_5\text{H}_4\text{SiMe}_3$]. *J. Organomet. Chem.* **1991**, *413*, 79–90.
- (528) Chorley, R. W.; Hitchcock, P. B.; Jolly, B. S.; Lappert, M. F.; Lawless, G. A. Crystalline Binuclear *cis*-Chlorotin(II) and *trans*-Chlorotin(II) Amides $[\text{Sn}(\mu\text{-Cl})(\text{NR}_2)_2]_2$, The *cis*-**1a**:*trans*-**1b** Isomerization for $[\text{NR}_2 = \text{NCMe}_2(\text{CH}_2)_3\text{CMe}_2]$, and the X-Ray Structures of **1a** and of *trans*- $[\text{Sn}(\mu\text{-Cl})(\text{N}(\text{SiMe}_3)_2)]_2$. *J. Chem. Soc. Chem. Commun.* **1991**, 1302–1303.
- (529) Cloke, F. G. N.; Hitchcock, P. B.; Lappert, M. F.; Lawless, G. A.; Royo, B. Lipophilic Strontium and Calcium Alkyls, Amides and Phenoxides: X-Ray Structures of the Crystalline Square-Planar $[(\text{trans-Sr}(\text{NR}'_2)_2(\mu\text{-1,4-dioxane}))_c]$ and Tetrahedral $[\text{CaR}_2(1,4\text{-dioxane})_2]$, $\text{R}' = \text{SiMe}_3$, $\text{R} = \text{CH}(\text{SiMe}_3)_2$. *J. Chem. Soc. Chem. Commun.* **1991**, 724–726.
- (530) Hitchcock, P. B.; Lappert, M. F.; Warhurst, N. J. W. Synthesis and Structure of a *rac*-Tris(divinylidisiloxane)diplatinum(0) Complex and its Reaction with Maleic-Anhydride. *Angew. Chemie Internat. Ed. Engl.* **1991**, *30*, 438–440.
- (531) Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F.; Leung, W. P.; Rai, A. K.; Taylor, R. E. Subvalent Group-14 Metal-Compounds .13. Oxidative Addition-Reactions of Germanium and Tin Amides $\text{M}(\text{NR}_2)_2$ ($\text{R} = \text{SiMe}_3$, $\text{M} = \text{Ge}$ or Sn) with Sulfur, Selenium, Tellurium or $\text{MeOCC}=\text{CCO}(\text{Me})$. X-Ray Structures of $[\text{Ge}(\text{NR}_2)_2(\mu\text{-Te})]_2$ and $\text{Sn}(\text{NR}_2)_2\text{CC}(\text{OMe})\text{OSn}(\text{NR}_2)_2\text{CC}(\text{OMe})\text{O}$. *Polyhedron* **1991**, *10*, 1203–1213.
- (532) Lappert, M. F. The Role of Trimethylsilyl-substituted Ligands in Coordination Chemistry - Bis(trimethylsilyl)methylmetal Complexes. In *Frontiers of Organosilicon Chemistry*; Bassindale, A R and Gaspar, P P, Eds.; Royal Soc Chemistry: Cambridge, 1991; pp 231–252.
- (533) Hey-Hawkins, E.; Lappert, M. F.; Atwood, J. L.; Bott, S. G. Bis(trimethylsilyl)phosphido Complexes .3. Syntheses, Structures and Reactions of [Bis(trimethylsilyl)phosphido]zirconocene(IV) Complexes and the X-Ray Structure of $(\text{AlMe}_2[\mu\text{-P}(\text{SiMe}_3)_2])_2$. *J. Chem. Soc. Dalton Trans.* **1991**, 939–948.
- (533a) Dixon, D. A, Arduengo, A. J, Lappert, M.F, Edge inversion in tricoordinated Main Group IV Anions *Heteroatom Chemistry* **1991**, *2*, 541
- (534) Ellis, D.; Hitchcock, P. B; Lappert, M. F Preparation and X-Ray Structure of $[\text{Ge}\{\text{N}(\text{SiMe}_3)_2\}_2(\mu\text{-O})]_2$, A Rare 1,3-Cyclodigermanoxane. *J. Chem. Soc. Dalton Trans.* **1992**, 3397.
- (535) Hitchcock, P. B.; Lappert, M. F.; Lawless, G. A.; Olivier, H.; Ryan, E. J. Lipophilic Halogenozirconocene(III) Complexes - $[(\text{Zr}[\eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_{2-1,3}]_2(\mu\text{-Cl}))_2]$, $[\text{N}(\text{Bu}^n)_4][\text{Zr}(\eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_{2-1,3})_2\text{Cl}_2]$ and $[\text{Zr}(\eta\text{-C}_5\text{H}_3(\text{SiMe}_3)_{2-1,3})_2\text{Cl}_2]$. *J. Chem. Soc. Chem. Commun.* **1992**, 474–476.

- (536) Kot, W. K.; Edelstein, N.; Lappert, M. F. The Electronic-Structure of Trivalent Thorium Compounds. *Abstr. Pap. Am. Chem. Soc.* **1992**, 203 (2), 102
- (537) Lappert, M. F.; Leung, W. P.; Raston, C. L.; Skelton, B. W.; White, A. H. Chemistry of *ortho*-Xylenediyl Metal-Complexes .5. Silicon and Tin Metallacycles derived from *ortho*-C₆H₄(CHR)₂ (R = H or SiMe₃). *J. Chem. Soc Dalton Trans.* **1992**, 775–785.
- (538) Hitchcock, P. B.; Lappert, M. F.; Yin, P. A Dilithium *o*-Phenylenediphosphide [Li(tmeda)]₂[C₆H₄(Pr)_{2-1,2}] as a[C₆H₄(PR')_{2-1,2}] or [C₆H₄(P²⁻)_{2-1,2}] Synthon. The X-Ray Structures of C₆H₄[PCH₂CHO₂CMe₂OCHCH₂-RR]_{2-1,2} and [C₆H₄(P(SiBu^t-P)-1,2)]₃(μ₃-SiBu^t) (R = SiMe₃, tmeda = [Me₂NCH₂]₂). *J. Chem. Soc. Chem. Commun.* **1992**, 1598–1599.
- (539) Cetinkaya, B.; Hitchcock, P. B.; Lappert, M. F.; Smith, R. G. The First Neutral, Mononuclear 4f Metal Thiolates and New Methods for corresponding Aryl Oxides and Bis(trimethylsilyl)amides. *J. Chem. Soc. Chem. Commun.* **1992**, 932–934.
- (540) Chorley, R. W.; Hitchcock, P. B.; Lappert, M. F. Preparation and X-Ray Characterization of the First Heteroleptic Hydrocarbon-soluble Tin(II) Pseudohalide, Sn(NCS) [N(SiMe₃)₂]. *J. Chem. Soc. Dalton Trans.* **1992**, 1451–1452.
- (541) Braunschweig, H.; Chorley, R. W.; Hitchcock, P. B.; Lappert, M. F. The First Monomeric Prochiral Tin(II) Complexes Sn[N(SiMe₃)₂]X [X = OC₆H₂Bu^t_{2-2,6-Me-4}, **1** or NCMe₂(CH₂)₃CMe₂, **2**]. The X-Ray Structure of **1** and Oxidative Addition-Reactions of **2**. *J. Chem. Soc. Chem. Commun.* **1992**, 1311–1313.
- (542) Chorley, R. W.; Hitchcock, P. B.; Lappert, M. F.; Leung, W. P.; Power, P. P.; Olmstead, M. M. Subvalent Group-14 Metal-Compounds .14. The X-Ray Crystal-Structures of two Monomeric Group-14 Metal Bisamides, Ge[N(SiMe₃)₂]₂ and Sn[NC(Me)₂(CH₂)₃CMe₂]₂. *Inorg. Chim. Acta* **1992**, 198, 203–209.
- (543) Hitchcock, P. B.; Howard, J. A. K.; Lappert, M. F.; Prashar, S. The First Examples of Intermolecular Weak (Agostic) γ-Methyl-Metal Interactions in Organolanthanide Complexes - The Synthesis and X-Ray Structures of [Yb(η-Cp'')₂]_∞ and [Eu(η-Cp'')₂]_∞ [Cp'' = C₅H₃(SiMe₃)_{2-1,3}]. *J. Organomet. Chem.* **1992**, 437, 177–189.
- (544) Chorley, R. W.; Hitchcock, P. B.; Lappert, M. F. Preparation and X-Ray Crystal-Structure of [Sn(N(SiMe₃)₂)₂(μ-O₂)]₂, A Rare Example of a Bis(1,2-μ-peroxo)-bridged Metal-Complex. *J. Chem. Soc. Commun.* **1992**, 525–526.
- (545) Cetinkaya, E.; Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F.; Spyropoulos, K. Synthesis and Characterization of Unusual Tetraaminoalkenes (Enetetramines). *J. Chem. Soc. Perkin Trans. 1* **1992**, 561–567.
- (546) Chorley, R. W.; Ellis, D.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Characterization of the Binuclear μ-Fluorotin(II) Amides [Sn(μ-F)NR₂]₂ [NR₂ = NC(Me)₂(CH₂)₃CMe₂ **1** or N(SiMe₃)₂ **2**]. Low-Temperature Solution NMR Spectroscopic Studies and the X-Ray Crystal-Structure of *trans*-**1**. *Bull. Soc. Chim. Fr.* **1992**, 129, 599–604.

- (547) Hitchcock, P. B.; Lappert, M. F.; Leung, W. P.; Liu, D. S.; Shun, T. Synthesis and Structures of the Heavier Alkali Metal Alkyls. The X-Ray Structures of $[\text{Na}(\mu\text{-R})]_{\infty}$ and $[\text{Rb}(\mu\text{-R})(\text{pmdeta})_2]$ [$\text{R} = \text{CH}(\text{SiMe}_3)_2$, $\text{pmdeta} = (\text{Me}_2\text{NCH}_2\text{CH}_2)_2\text{NMe}$]. *J. Chem. Soc. Chem. Commun.* **1993**, 1386–1387.
- (548) Ellis, S. L.; Hitchcock, P. B.; Holmes, S. A.; Lappert, M. F.; Slade, M. J. Subvalent Group 14 Metal-Compounds .15. Germanium and Tin Amides $\text{M}(\text{NR}_2)_2$ as Ligands in Carbonylchromium(0) Chemistry. The Crystal-Structure of the Compounds *cis*- $[\text{Cr}(\text{CO})_4(\text{Sn}(\text{NR}'_2)_2)_2]$ [$\text{M} = \text{Ge}$ or Sn , $\text{R}' = \text{SiMe}_3$ or $\text{NR}_2 = \text{NCMe}_2(\text{CH}_2)_3\text{CMe}_2$]. *J. Organomet. Chem.* **1993**, 444, 95–99.
- (549) Jolly, B. S.; Lappert, M. F.; Engelhardt, L. M.; White, A. H.; Raston, C. L. Subvalent Group-14 Metal-Compounds .16. Synthesis, Crystal-Structure and Characterization of some β -Functionalized-Alkyltin(II) Complexes, $\text{SnR}(\text{X})$. { $\text{R} = \text{C}_5\text{H}_4\text{N}[\text{C}(\text{SiMe}_3)_2]_2$ }, $\text{X} = \text{R}$, Cl or $\text{N}(\text{SiMe}_3)_2$. *J. Chem. Soc. Dalton Trans.* **1993**, 2653–2663.
- (550) Cetinkaya, B.; Hitchcock, P. B.; Lappert, M. F.; Shaw, D. B.; Spyropoulos, K.; Warhurst, N. J. W. Carbene Complexes .23. Preparation, Characterization, and Structures of the Enetetramine-derived Carbenerhodium(I) Chloride Complexes $[\text{RhCl}(\text{L}^{\text{R}})_3]$, *trans*- $[\text{RhCl}(\text{CO})(\text{L}^{\text{R}'_2})]$, and $[(\text{RhCl}(\text{COD}))_2(\mu\text{-L}_2^{(323)\text{R}})]$ [L_2^{R} or $\text{R}' = \text{CN}(\text{R}$ or $\text{R}')(\text{CH}_2)_2\text{NR}$ (or R'), $\text{R} = \text{CH}_2\text{Ph}$ or Et , $\text{R}' = \text{Me}$ and $\text{L}^{(323)\text{R}} = \text{CN}(\text{R})(\text{CH}_2)_3\text{N}(\text{CH}_2)_2\text{N}(\text{CH}_2)\text{N}(\text{R})\text{C}$ ($\text{R} = \text{CH}_2\text{Ph}$)]. *J. Organomet. Chem.* **1993**, 459, 311–317.
- (551) Chamizo, J. A.; Hitchcock, P. B.; Jasim, H. A.; Lappert, M. F. Carbene Complexes 22. Preparation, Properties and Structures of the N,N-Functionalized Bis(amino)carbenemolybdenum(0) Carbonyls $[\text{Mo}(\text{CO})_4(\text{CN}(\text{CH}_2\text{CH}:\text{CH}_2)(\text{CH}_2)_2\text{N}(\text{CH}_2\text{CH}:\text{CH}_2))]$ and $[\text{Mo}(\text{CO})_3(\text{CN}[(\text{CH}_2)_3\text{PPh}_2](\text{CH}_2)_2\text{N}((\text{CH}_2)_3\text{PPh}_2))_n]$. *J. Organomet. Chem.* **1993**, 451, 89–96.
- (552) Hitchcock, P. B.; Lappert, M. F.; Lawless, G. A.; Royo, B. Synthesis and Structure of Crystalline $[\text{K}(\text{Sn}(\text{CH}_2\text{Bu}^t)_3)(\eta\text{-C}_6\text{H}_5\text{Me})_3]$ and the first NMR Spectral Observation of ^{119}Sn -- ^{39}K Coupling. *J. Chem. Soc. Chem Commun.* **1993**, 554–555.
- (553) Hitchcock, P. B.; Lappert, M. F.; MacKinnon, I. A. Lipophilic Metal (Na, Ti-III, Zr-IV, Rh-I and Pd-II) Complexes derived from the Hybrid Ligands -OR and HOR ($\text{R} = \text{Me}_2\text{PCH}_2\text{CBu}^t$). The X-Ray Structures of $[\text{TiCl}(\text{OCBu}^t\text{CH}_2\text{PMe}_2)_2]$ and *trans*- $[\text{Rh}(\text{CO})\text{Cl}(\text{PMe}_2\text{CH}_2\text{CBu}^t\text{OH})_2]$. *J. Chem. Soc. Chem. Commun.* **1993**, 1015–1017.
- (554) Cetinkaya, E.; Hitchcock, P. B.; Kucukbay, H.; Lappert, M. F.; Al-Juaid, S. Carbene Complexes .24. Preparation and Characterization of two Enetetramine-derived Carbenerhodium(I) Chloride Complexes $\text{RhCl}(\text{L}^{\text{R}})_3$ and $[\text{RhCl}(\text{COD})\text{L}^{\text{R}}]$ ($\text{L}^{\text{R}} = \text{CN}(\text{Me})\text{Cu}(\text{CH})_4\text{CNMe-}o$) and the Preparation and X-Ray Structures of the Enetetramine L^{R}_2 and its salt $[\text{L}^{\text{R}}_2][\text{BF}_4]_2$. *J. Organomet. Chem.* **1994**, 481, 89–95.
- (555) Hitchcock, P. B.; Lappert, M. F.; Liu, D. S. Transformation of the Bis(trimethylsilyl)methyl into Aza-Allyl and β -Diketiminato Ligands. The X-Ray Structures of $\text{Cyclo}([\text{Li}(\text{N}(\text{R})\text{C}(\text{Bu}^t\text{CH}(\text{R})))_2]$ and

- Cyclo[(Zr(N(R)C(Bu^t)CHC(Ph)N(R))Cl₃] (R = SiMe₃). *J. Chem. Soc. Chem. Commun.* **1994**, 2637–2638.
- (556) Hitchcock, P. B.; Holmes, S. A.; Lappert, M. F.; Tian, S. Synthesis, Structures and Reactions of Ytterbium(II) Alkyls. *J. Chem. Soc. Chem. Commun.* **1994**, 2691–2692.
- (557) Lappert, M. F. Recent Advances in the Chemistry of Bivalent Organic Compounds of Germanium, Tin and Lead. *Main Gr. Met. Chem.* **1994**, 17, 183–207.
- (558) Frankland, A. D.; Hitchcock, P. B.; Lappert, M. F.; Lawless, G. A. A Novel High-Yield Route to Organic Derivatives of Group 2 Metals. X-Ray Structure of [(Ba(OTf)₂)₄(py)₁₄]·py (OTf = OSO₂CF₃) and NMR Spectral Characterization of [Ba(NR₂)(μ-NR₂)₂ Na(THF)₂] (R=SiMe₃). *J. Chem. Soc. Chem. Commun.* **1994**, 2435–2436.
- (559) Beck, G.; Lappert, M. F.; Hitchcock, P. B. Synthesis of the Sterically Hindered Complexes [M(CO)₅(CNBR₂)] [R = CH(SiMe₃)₂, M = Cr, Mo, or W]. Crystal Structure of [Cr(CO)₅(CNBR₂)]. *J. Organomet. Chem.* **1994**, 468, 143–148.
- (560) Hitchcock, P. B.; Lappert, M. F.; Liu, D. S. Transformation of the Bis(trimethylsilyl)methyl into a β-Diketiminato Ligand. The X-Ray Structure of [Li(L'L')]₂, SnCl(Me)₂(L'L') and SnCl(Me)₂(LL), [L'L'=N(R)C(Ph)C(H)C(Ph)NR, LL = N(H)C(Ph)C(H)C(Ph)NH, R=SiMe₃]. *J. Chem. Soc. Chem. Commun.* **1994**, 1699–1700.
- (561) van den Hende, J. R.; Hitchcock, P. B.; Lappert, M. F. Three-coordinate Neutral Ligand-free Ytterbium(II) Complexes [(YbX(μ-X))₂] (X = OAr, **1**, or OCBu^t₃ or [(Yb(NR₂)(μ-X))₂] (X=OCBu^t₃, **2**, or Oar, **4**, (Ar = C₆H₂Bu^t₂-2,6-Me-4, R = SiMe₃). The X-Ray Structures of Structures **1** and **2**. *J. Chem. Soc. Chem. Commun.* **1994**, 1413–1414.
- (562) van den Hende, J. R.; Hitchcock, P. B.; Lappert, M. F.; Nile, T. A. The Synthesis and X-Ray Structures of Ytterbocene(II) Complexes containing Pendant Pyridyl Groups, [Yb(Cp^x)₂] (Cp^x = η⁵-C₅H₃(R)[CMe₂(CH₂)_nC₃H₄N-2]-1,3 - R=H or SiMe₃ and N = 0 or 1). *J. Organomet. Chem.* **1994**, 472, 79–85.
- (563) Braunschweig, H.; Hitchcock, P. B.; Lappert, M. F.; Pierssens, L. J-M. Synthesis, Structures, and Reactions of Two Bis(diaminostannylene)s and a Bis(diaminogermylene) containing a Central C₆ Ring. *Angew. Chemie-Int. Ed. Engl.* **1994**, 33, 1156–1158.
- (564) van den Hende, J. R.; Hitchcock, P. B.; Lappert, M. F. Reactions of Ytterbium(II) Amides with Various Brønsted Acids, CS₂ or LiNR₂. Crystal Structures of [(Yb(NR₂)(μ-OCBu^t₃)₂] and [Yb(OCBu^t₃)₂(thf)₂] (R = SiMe₃, thf=tetrahydrofuran). *J. Chem. Soc. Dalton Trans.* **1995**, 2251–2258.
- (565) Hitchcock, P. B.; Lappert, M. F.; Leung, W. P.; Yin, P. Synthesis and Structures of Dilithium (1,2-Diphosphido)benzenes. *J. Chem. Soc. Dalton Trans.* **1995**, 3925–3932.

- (566) Blake, P. C.; Lappert, M. F.; Taylor, R. G.; Atwood, J. L.; Hunter, W. E.; Zhang, H. M. Synthesis, Spectroscopic Properties and Crystal-Structures of $[ML_2Cl_2]$ [$M = Th$ or U , $L = \eta-C_5H_3(SiMe_3)_2-1.3$] and $[UL_2X_2]$ ($X = Br, I$ or BH_4). *J. Chem. Soc. Dalton Trans.* **1995**, 3335–3341.
- (567) van den Hende, J. R.; Hitchcock, P. B.; Holmes, S. A.; Lappert, M. F.; Leung, W. P.; Mak, T. C. W.; Prashar, S. Synthesis and Characterization of Lanthanide(II) Aryloxides including the first Structurally Characterized Europium(II) Compound $[Eu(OC_6H_2Bu^t-2,6-Me-4)_2(thf)_3] \cdot thf$ ($thf = tetrahydrofuran$). *J. Chem. Soc. Dalton Trans.* **1995**, 1427–1433.
- (568) Bohra, R.; Hitchcock, P. B.; Lappert, M. F.; Au-Yeung, S. C. F.; Leung, W. P. Group-6 Metallocene(IV) Main Group Metal Complexes. Synthesis and Structures of a Mo-B-Li Compound and of $[W(\eta-C_5H_5)_2H(SnCl_2CH(SiMe_3)_2)]$. *J. Chem. Soc. Dalton Trans.* **1995**, 2999–3005.
- (569) Hitchcock, P. B.; Lappert, M. F.; Liu, D. S.; Ryan, E. J. Ligand Redistribution Reactions as a Route to Cyclopentadienylzirconium(IV) or 1-Aza-allylzirconium(IV) Trichlorides and the X-Ray Structures of $[(Zr(LL')Cl_2(\mu-Cl))_2]$ and $[Zr(LL')_2Cl_2]$ [$LL' = N(R)C(Bu^tCHR, R=SiMe_3)$]. *Polyhedron* **1995**, 14, 2745–2752.
- (570) Cloke, F. G. N.; Hitchcock, P. B.; Lappert, M. F.; MacBeath, C.; Mepsted, G. O. Synthesis and Characterization of a Novel Macrocyclic Vinylsiloxane-based Tris(alkene)nickel(0) Complex. *J. Chem. Soc. Chem. Commun.* **1995**, 87–88.
- (571) Gun'ko, Y. K.; Hitchcock, P. B.; Lappert, M. F. Activation of a C-O Bond by Reaction of a Tris(cyclopentadienyl)lanthanide Complex with an Alkali-Metal in Dimethoxyethane (DME). Crystal Structures of $[Nd(\eta-C_5H_3(SiMe_3))_2-1,3)_2(\mu-OMe)_2Li(DME)]$ and $[(Ce(\eta-C_5H_3Bu^t-1,3)_2(\mu-OMe))_2]$. *J. Organomet. Chem.* **1995**, 499, 213–219.
- (572) Avent, A. G.; Hitchcock, P. B.; Lappert, M. F.; Yin, P. Synthesis, Crystal-Structure and Nuclear-Magnetic-Resonance Spectral Study of the (+)-(R,R,R*S*) and (-)-(S,S,R*, S*) Enantiomers of the Chiral Diphosphine $[C_6H_4(PPhCH_2CHO)_2CMe_2]-1,2$. *J. Chem. Soc. Dalton Trans.* **1995**, 2095–2100.
- (573) van den Hende, J. R.; Hitchcock, P. B.; Holmes, S. A.; Lappert, M. F.; Tian, S. Lanthanide(II) Alkyls, Amides, Alkoxides and Aryloxides .4. Synthesis and Characterization of Ytterbium(II) Alkyls. *J. Chem. Soc. Dalton Trans.* **1995**, 3933–3939.
- (574) Gehrhus, B.; Lappert, M. F.; Heinicke, J.; Boese, R.; Blaser, D. Synthesis, Structures and Reactions of New Thermally Stable Silylenes. *J. Chem. Soc. Chem. Commun.* **1995**, 1931–1932.
- (575) Cetinkaya, E.; Hitchcock, P. B.; Kucukbay, H.; Lappert, M. F.; Al-Juaid, S. Carbene Complexes 24. Preparation and Characterization of two Enetetramine-derived Carbenerhodium(I) Chloride Complexes $RhCl(L^R)_3$ and $[RhCl(COD)L^R]$ ($L^R = CN(Me)C(CH)_4CNMe-o$) and the Preparation and X-Ray Structures of the Enetetramine L^R_2 and its salt $[L^R_2][BF_4]_2$. *J. Organomet. Chem.* **1995**, 491, C7.

- (576) Braunschweig, H.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Characterization of *N,N'*-Disubstituted 1,2-phenylenebis(amido)tin(II) Compounds. X-Ray Structures of 1,2-C₆H₄[N(CH₂Bu^t)₂Sn] and of [1,2-C₆H₄(N(SiMe₃)₂Sn)₂(tmeda)]. *Z. Anorg. Allg. Chemie* **1995**, 621, 1922–1928.
- (577) Lappert, M. F.; Liu, D. S. Recent Studies on Metal and Metalloid Bis(trimethylsilyl) methyls and the Transformation of the Bis(trimethylsilyl)methyl into the Azaallyl and β-Diketiminato Ligands. *J. Organomet. Chem.* **1995**, 500, 203–217.
- (578) Avent, A. G.; Lappert, M. F.; MacBeath, C. Stereochemical Nonrigidity in a Macrocyclic Vinylsiloxane-based Tris(alkene)nickel(0) Complex. *J. Organomet. Chem.* **1995**, 502, 163–167.
- (579) Edelman, M. A.; Hitchcock, P. B.; Hu, J.; Lappert, M. F. Organoactinide Chemistry .2. The Chemistry of some Novel Cyclopentadienylthorium Complexes. *New J. Chem.* **1995**, 19, 481–489.
- (580) Lappert, M. F.; Scott, F. P. A. The Reaction Pathway from Speiers to Karstedts Hydrosilylation Catalyst. *J. Organomet. Chem.* **1995**, 492, C11–C13.
- (581) Hitchcock, P. B.; Lappert, M. F.; Liu, D. S. Transformation of the Bis(trimethylsilyl) methyl into a 1,3-Diaza-allyl Ligand. Synthesis and Crystal-Structures of [K(N(R)C(Ar)NC(Ar)CHR)(NCAr)₂] and [(UCl(μ-Cl)(L)(NR))₂][UCl₂(L)(L')]₂ [R = SiMe₃ Ar = C₆H₃Me_{2-2,5}; L = N(R)C(Ph)C(H)CPhNR; L' = N(R)C(Ph)NC(Ph)CHR]. *J. Organomet. Chem.* **1995**, 488, 241–248.
- (582) Avent, A. G.; Hitchcock, P. B.; Lappert, M. F.; Liu, D. S.; Mignani, G.; Richard, C.; Roche, E. Preparation, Spectra and X-Ray Structure of an Archetypal Coordination Compound [BCl₃(NH₃)] and its Thermolysis. *J. Chem. Soc. Chem. Commun.* **1995**, 855–856.
- (583) Hitchcock, P. B.; Lappert, M. F.; Liu, D. S.; Tian, S. Some New Silicotropic Rearrangements. In *Progress In Organosilicon Chemistry*; Marciniak, B and Chojnowski, J, Eds; Gordon And Breach, Basel 1995; pp 345–359.
- (584) Hitchcock, P. B.; Jang, E.; Lappert, M. F. Synthesis and Structures of Bis[bis(trimethylsilyl)amido]tin(IV) Cyclic Chalcogenides [(Sn[N(SiMe₃)₂]₂(μ-E))₂] and a Heterobimetallic Analogue [(Me₃Si)₂N)₂Ge(μ-Te)₂Sn(N(SiMe₃)₂)₂] (E = S, Se or Te). *J. Chem. Soc. Dalton Trans.* **1995**, 3179–3187.
- (585) van den Hende, J. R.; Hitchcock, P. B.; Holmes, S. A.; Lappert, M. F. Synthesis and ¹⁷¹Yb-¹H Nuclear-Magnetic-Resonance Spectra of Ytterbium(II) Aryloxides [Yb(OR')₂(L)_n] [(L)_n=(OEt)₂, (THF)₂, (THF)₃, (Pyridine)₂ or Me₂PCH₂CH₂PMe₂] and [(Yb(μ-OR')(X))₂] (X = OR' or NR₂) (R' = C₆H₂Bu^t_{2-2,6}-Me-4, R = SiMe₃ thf = tetrahydrofuran). *J. Chem. Soc. Dalton Trans.* **1995**, 1435–1440.
- (586) Cassani, C.; Gun'ko, Y. K.; Hitchcock, P. B.; Lappert, M. The First Metal Complexes Containing the 1,4-Cyclohexa-2,5-dienyl Ligand (Benzene 1,4-Dianion). Synthesis and Structures of [K(18-crown-6)][Ln(η⁵-C₅H₃(SiMe₃)_{2-1,3})(C₆H₆)] (Ln = La, Ce). *J. Chem. Soc., Chem. Commun.* **1996**, 1987–1988.

- (587) Hitchcock, P.; Jang, E.; Lappert, M. Aspects of the Chemistry of Subvalent Organic Compounds of Germanium, Tin and Lead; Synthesis and Structures of Bis(bis(trimethylsilyl)amido)tin(IV) Chalcogenides. In *Main Group Elements and their Compounds* V. G. Kumar Das Ed. Narosa Publishing House **1996**, 328–337.
- (588) Hitchcock, P. B.; Lappert, M.F.; Wang, Z-X. Novel α - ω -Bis(trialkylsilyl)allyl and -1-Azapentyl Ligands. Structures of $[\text{Li}(\eta^3\text{-CH}(\text{CHSiMe}_2\text{Bu}^t)_2(\text{tmen}))]$, $[\text{Li}(\text{N}(\text{SiMe}_3)\text{CBu}^t(\text{CH})_3\text{SiMe}_2\text{Bu}^t)(\text{tmen})]$ and $\text{K}(\eta^4\text{-N}(\text{SiMe}_2\text{Bu}^t)\text{CBu}^t(\text{CH})_3\text{SiMe}_2\text{Bu}^t)]_\infty$ *Chem. Commun.* **1996**, 1647–1648.
- (589) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F.; Heinicke, J.; Boese, R.; Blaser, D. Synthesis, Structures and Oxidative Addition Reactions of New Thermally Stable Silylenes; Crystal Structures of $[\text{Si}\{\text{N}(\text{CH}_2^t\text{Bu})\}_2\text{C}_6\text{H}_4\text{-1,2}]$ and $[\text{Si}\{\text{N}(\text{CH}_2^t\text{Bu})\}_2\text{C}_6\text{H}_4\text{-1,2}](\mu\text{-E})_2$ (E = Se or Te). *J. Organomet. Chem.* **1996**, 521, 211–220.
- (590) Corradi, M. M.; Frankland, A. D.; Hitchcock, P.; Lappert, M. F.; Lawless, G. A. Synthesis, Structure and Reactivity of $[\text{Yb}(\eta\text{-C}_5\text{Me}_5)\{\text{Si}(\text{SiMe}_3)_3\}(\text{thf})_2]$. *Chem. Commun.* **1996**, 2323–2324.
- (591) Blakeman, P.; Gehrhus, B.; Green, J. C.; Heinicke, J.; Lappert, M. F.; Kindermann, M.; Veszpremi, T. Electronic Structure of Stable Benzodiazasilylenes: Photoelectron Spectra and Quantum Chemical Investigations. *J. Chem. Soc. Dalton Trans.* **1996**, 1475–1480.
- (592) Hitchcock, P. B.; Hu, J.; Lappert, M. F.; Layh, M.; Liu, D. S.; Severn, J. R.; Tian, S. The Chemistry of 1-Aza-Allyl- and β -Diketiminato-Metal Complexes: A Review. *An. Quim.* **1996**, 92, 266
- (593) Hitchcock, P. B.; Hu, J.; Lappert, M. F.; Layh, M.; Liu, D. S.; Severn, J. R.; Shun, T. The Chemistry of 1-Aza-alkyl and β -Diketiminato-Metal Complexes: A Review. *An. Quim. Int Ed Engl.* **1996**, 92, 186–190.
- (594) Deelman, B. J.; Hitchcock, P. B.; Lappert, M. F.; Lee, H. K.; Leung, W. P. Novel Monoanionic Di- N, N' -centred Chelating Ligands and their C_1 and C_2 symmetrical Zirconium Complexes. *J. Organomet. Chem.* **1996**, 513, 281–285.
- (595) Avent, A. G.; Frankland, A. D.; Hitchcock, P. B.; Lappert, M. F. Synthesis, X-Ray Crystal Structure and Solution NMR Spectroscopic Studies of $[\text{Li}\{\text{N}(\text{H})\text{C}(\text{Me})=\text{C}(\text{H})(\text{CN})\}(\text{py})_2]_2$ (py = NC_5H_5). *Chem. Commun.* **1996**, 2433–2434.
- (596) Froelich, N.; Hitchcock, P. B.; Hu, J.; Lappert, M. F.; Dilworth, J. R. Co-ordination Chemistry of Tridentate Phosphinothiolates; Syntheses and Structures of $[\text{Li}_4\{\text{PhP}(\text{C}_6\text{H}_3\text{S-2-SiMe}_3\text{-3})_2\}_2(\text{MeOCH}_2\text{CH}_2)\text{OMe}]_2$, $[\text{Sn}_2\{\text{PhP}(\text{C}_6\text{H}_3\text{S-2-SiMe}_3\text{-3})_2\}_2]$ and $[\text{NHET}_3][\text{Sm}\{\text{PhP}(\text{C}_6\text{H}_3\text{S-2-R-3})_2\}_2(\text{py})_2] \cdot 2\text{py}$ (R = H or SiMe_3 , py = $\text{C}_5\text{H}_5\text{N}$). *J. Chem. Soc. Dalton Trans.* **1996**, 1941–1946.
- (597) Hitchcock, P. B.; Lappert, M. F.; Pierssens, L. J. M. Synthesis and X-Ray Molecular Structures of the Silver(I) Amides $[\{\text{Ag}[\mu\text{-N}(\text{SiMe}_3)_2]\}_4]$ and $[\{\text{Ag}[\mu\text{-NCMe}_2(\text{CH}_2)_3\text{CMe}_2]\}_4]$. *Chem. Commun.* **1996**, 1189–1190.

- (598) Drost, C.; Hitchcock, P. B.; Lappert, M. F. Dilithium Diamides $[\{\text{Li}(\text{OC}_4\text{H}_8)\}_2\{\text{C}_{20}\text{H}_{12}(\text{NR})_2\}]$ (R = SiMe₃ or CH₂Bu^t) derived from *R*-, *S*- or *R,S*-2,2'-diamino-1,1'-binaphthyl Derivatives. *J. Chem. Soc. Dalton Trans.* **1996**, 3595–3601.
- (599) Frankland, A. D.; Lappert, M. F. Alkaline-Earth-Metal Arenesulfonates as Precursors to Organic Derivatives of Group 2 Metals. *J. Chem. Soc. Dalton Trans.* **1996**, 4151–4152.
- (600) Hitchcock, P.; Lappert M F; Tian S. Synthesis, Characterisation and Alkylation Reactons of Lanthanide β-Diketiminates. *J. Chem. Soc. Dalton Trans.* **1997**, 1359–1362.
- (601) Hitchcock, P. B.; Hu, J.; Lappert, M. F.; Layh, M.; Severn, J. Variation of Bonding Modes in Homoleptic Tin(II) 1-Azaallyls. *Chem. Commun.* **1997**, 1189–1190.
- (602) Gehrhus, B.; Lappert, M. F. Novel Ring Systems by Reaction of a Stable Bis(amino)silylene with Multiply Bonded Compounds. *Phosphorus Sulfur Silicon Relat. Elem.* **1997**, 124, 537–540.
- (603) Hitchcock, P. B.; Lappert, M. F.; MacBeath, C.; Scott, F. P. E.; Warhurst, N. J. W. The Synthesis and Characterisation of Di- and Trinuclear Vinylsilicon-(Tertiary Phosphine) Complexes of Platinum(0) and Nickel(0). *J. Organomet. Chem.* **1997**, 534, 139–152.
- (604) Hitchcock, P. B.; Lappert, M. F.; Tian, S. Transformation of the Bis(trimethylsilyl)methyl into the 1-Aza-Allyl and β-Diketiminato Ligands .7. Synthesis, Characterisation and Alkylation Reactions of Lanthanide β-Diketiminates; Crystal Structures of [Nd(L-L)₂Cl] and [Ce(L-L)(CHR₂)₂] [L-L = NRCPhCHCPhNR R =SiMe₃]. *J. Chem. Soc. Dalton Trans.* **1997**, 1945–1952.
- (605) Lappert, M. F.; Raston, C. L.; Skelton, B. W.; White, A. H. Metallocene Derivatives of Early Transition Metals .5. C-centered Chiral Metal Alkyls, [MR*(Cl)(η-C₅H₅)₂], *rac*- and *meso*-[ZrR*₂(η-C₅H₅)₂] [R* = CH(SiMe₃)C₆H₄Me-*o*], and their one-electron Reductions; Reaction of Li[CH(SiMe₃)₂](Me₂NCH₂CH₂NMe₂) with [MCl₂(η-C₅H₅)₂] (M = Zr or Hf). *J. Chem. Soc. Dalton Trans.* **1997**, 2895–2902.
- (606) Cetinkaya, B.; Cetinkaya, E.; Hitchcock, P. B.; Lappert, M. F.; Ozdemir, I. Synthesis and Characterisation of 1-Alkyl-2-imidazoline Complexes of Noble Metals; Crystal Structure of *trans*-[PtCl₂{N=C(H)N(Et)CH₂CH₂}(PEt₃)]. *J. Chem. Soc. Dalton Trans.* **1997**, 1359–1362.
- (607) Hitchcock, P. B.; Lappert, M. F.; Tian, S. Synthesis, Characterisation and Reactions of 1,3-Bis(trimethylsilyl)-1-aza-allyl-lanthanide Complexes; X-Ray Structures of [Sm(LL[^])₂I(thf)], [Yb(LL[^])₂] and [RN=C(Bu^t)CH(R)]₂ (thf = tetrahydrofuran, LL[^] = η³-NC(R)C(Bu^t)CHR, R = SiMe₃). *J. Organomet. Chem.* **1997**, 549, 1–12.
- (608) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. New Reactions of a Silylene: Insertion into M-N Bonds of M[N(SiMe₃)₂]₂ (M = Ge, Sn, or Pb). *Angew. Chem.-Int. Ed. Engl.* **1997**, 36, 2514–2516.

- (609) Deelman, B. J.; Lappert, M. F.; Lee, H. K.; Mak, T. C. W.; Leung, W. P.; Wei, P. R. Lithium Derivatives of Novel Monoanionic Di-*N,N'*-chelating Pyridyl- and Quinoly-1-azaallyl Ligands. *Organometallics* **1997**, *16*, 1247–1252.
- (610) Hitchcock, P. B.; Lappert, M. F.; Layh, M. The Role of Lithium 1,3-Bis(trimethylsilyl)-1-aza-allyls in Phosphorus Chemistry. *J. Organomet. Chem.* **1997**, *529*, 243–255. See erratum *J. Organomet. Chem.* **1999**, *580*, 386
- (611) Hitchcock, P. B.; Lappert, M. F.; Wang, Z-X. Novel (Silylimino)diarylphosphoranyl(trimethylsilyl)methyl-*C,N* Ligands [CH(SiMe₃)PPh₂=NSiMe₃] ([LL']) and [CH(SiMe₃){Ph(1,2-C₆H₄)P=NSiMe₂}]-([LL'']) and the Structures of [Li(LL'')] and [Pb(LL')₂]. *Chem. Commun.* **1997**, 1113–1114.
- (612) Hitchcock, P. B.; Lappert, M. F.; MacBeath, C.; Scott, F. P. E.; Warhurst, N. J. W. The Synthesis and Characterisation of Some Divinylidisiloxane-(Tertiary Phosphine) Complexes of Platinum(0) and Nickel(0). *J. Organomet. Chem.* **1997**, *528*, 185–190.
- (613) Hitchcock, P. B.; Hu, J.; Lappert, M. F.; Tian, S. Organometallic Chemistry of the Actinides .3. Novel 1-Aza-allyl- and β-Diketiminatothorium Chlorides; X-Ray Structures of [{Th(LL')₂(μ₃-Cl)(μ-Cl)₂K(OEt₂) }_∞] and [Th(LL)₂Cl₂] [LL'=N(SiMe₃)C(Bu^t)C(H)SiMe₃; LL={N(SiMe₃)C(Ph)CH}]. *J. Organomet. Chem.* **1997**, *536-537*, 473–480.
- (614) Boesveld, W. M.; Hitchcock, P. B.; Lappert, M. F. Reactions of 1,3,5-Triazine with Organolithium Compounds yielding 1,4-Dihydrotriazines or the Ring-opened Products, a 3-Lithio-1,3,5,7-tetraazaheptatriene or -1,3,5-Triazaheptatriene. *Chem. Commun.* **1997**, 2091–2092.
- (615) Cassani, M. C.; Lappert, M. F.; Laschi, F. First Identification by EPR Spectra of Lanthanum(II) Organometallic Intermediates (and E_{1/2} for La³⁺ → La²⁺) in the C-O Bond Activation of Dimethoxyethane. *Chem. Commun.* **1997**, 1563–1564.
- (616) Kucukbay, H.; Cetinkaya, E.; Cetinkaya, B.; Lappert, M. F. Reactions of Electron-Rich Olefins with Proton-Active Compounds. *Synth. Commun.* **1997**, *27*, 4059–4066.
- (617) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. The Thermally Stable Silylene Si[{N(CH₂Bu^t)}₂C₆H₄-1,2]: Reactivity toward CO Double Bonds. *Organometallics* **1997**, *16*, 4861–4864.
- (618) Braunschweig, H.; Drost, C.; Hitchcock, P. B.; Lappert, M. F.; Pierssens, L. J. M. A Dinuclear Tin(II) Amide, a *meta*-Stannylaminocyclophane and its *ortho*-Stannylated Derivative, a Dimeric Trinuclear Tin(II) Cluster. *Angew. Chem.-Internat. Ed. Engl.* **1997**, *36*, 261–263.
- (619) Hitchcock, P. B.; Lappert, M. F.; Wang, Z. X. Reactions of α-Lithiated Phosphinimines with PhCN; The Crystal Structure of [K{N(H)C(Ph)C(H)P(Ph)₂=NSiMe₃}(tmen)]₂ (tmen=Me₂NCH₂CH₂NMe₂). *J. Chem. Soc. Dalton Trans.* **1997**, 1953–1956.

- (620) Drost, C.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Characterisation of the First Stable Heteroleptic Silylstannylenes. *Chem. Commun.* **1997**, 1845–1846.
- (621) Drost, C.; Hitchcock, P. B.; Lappert, M. F.; Pierssens, L. J. M. The Novel, Chelating *C,N*-Bidentate 2,6-Bis(dimethylamino)phenyl Ligand (R-), Showing Ambidentate *N,N'*-character in $M(R)_2$ ($M = Ge, Sn, Pb$) and $Sn(R)X$ [$X = N(SiMe_3)_2, CH(SiMe_3)_2, Cl$]. *Chem. Commun.* **1997**, 1141–1142.
- (622) Edelman, M. A.; Hitchcock, P. B.; Lappert, M. F.; Liu, D. S.; Tian, S. Synthesis and Characterization of Trimethylsilylmethyl-, Bis(trimethylsilyl)methyl- and Silyl-Substituted Cyclopentadienes and their Alkali Metal Complexes. *J. Organomet. Chem.* **1998**, 550, 397–408.
- (623) Blake, P. C.; Edelman, M. A.; Hitchcock, P. B.; Hu, J.; Lappert, M. F.; Tian, S.; Muller, G.; Atwood, J. L.; Zhang, H. M. Organometallic Chemistry of the Actinides Part 4 - The Chemistry of some Tris(cyclopentadienyl)actinide Complexes. *J. Organomet. Chem.* **1998**, 551, 261–270.
- (624) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. The Thermally Stable Silylene $Si[\{N(CH_2Bu^t)\}_2C_6H_4-1,2]$: Reactivity toward CN Double Bonds. *Organometallics* **1998**, 17, 1378–1382.
- (625) Gun'ko, Y. K.; Hitchcock, P. B.; Lappert, M. F. Displacement of a Cyclopentadienyl Ligand by a Crown Ether from a Lanthanocene(II) $[LnCp''_2]$; Crystal Structures of the First Cationic Lanthanoid(II) Complexes, $[SmCp''([18]-Crown-6)][SmCp''_3] \cdot 0.5C_6H_6$ and $[YbCp''([18]-Crown-6)][Cp''] \cdot 3C_6H_6$ $Cp'' = \eta^5-C_5H_3(SiMe_3)_2-1,3$. *Chem. Commun.* **1998**, 1843–1844.
- (626) Sitzmann, H.; Lappert, M. F.; Dohmeier, C.; Uffing, C.; Schnöckel, H. Cyclopentadienyl Derivatives of Aluminum(I). *J. Organomet. Chem.* **1998**, 561 203–208.
- (627) Hitchcock, P. B.; Lappert, M. F.; Layh, M. Synthesis and Molecular Structures of copper(I) 1-Azaallyls. *J. Chem. Soc. Dalton Trans.* **1998**, 1619–1623.
- (628) Gehrhus, B.; Lappert, M. F. Reactions of the Stable Bis(amino)silylene $Si[\{N(CH_2Bu^t)\}_2C_6H_4-1,2]$ with Multiply Bonded Compounds. *Polyhedron* **1998**, 17, 999–1000.
- (629) Hitchcock, P. B.; Lappert, M. F.; Layh, M. Synthesis and Structures of tin(II) and lead(II) 1-Aza-allyls; the $[N(SiMe_3)C(Ph)C(SiMe_3)_2]$ Ligand. *Inorg. Chim. Acta* **1998**, 269, 181–190.
- (630) Della Bona, M. A.; Cassani, M. C.; Keates, J. M.; Lawless, G. A.; Lappert, M. F.; Sturmman, M.; Weidenbruch, M. Magnetic Resonance Spectroscopic Studies of a Tetraaryl-distannene and -digermene $[M_2R_4]$ ($R = C_6HBU^t-2-Me_3-4,5,6$ and $M = Sn$ or Ge). *J. Chem. Soc. Dalton Trans.* **1998**, 1187–1190.
- (631)

- (632) Cassani, M. C.; Duncalf, D. J.; Lappert, M. F. The First Example of a Crystalline Subvalent Organolanthanum Complex: $[\text{K}([\text{18crown-6})-(\eta^2\text{-C}_6\text{H}_6)_2][(\text{LaCp}''^2)(\mu\text{-}\eta^6:\eta^6\text{-C}_6\text{H}_6)]\cdot 2\text{C}_6\text{H}_6$ ($\text{Cp}'' = \eta^5\text{-C}_5\text{H}_3\text{Bu}^t\text{-1,3}$). *J. Am. Chem. Soc.* **1998**, *120*, 12958–12959.
- (633) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F.; Maciejewski, H. Silylenenickel(0) or silyl(silylene)platinum(II) Complexes by Reaction of $\text{Si}[(\text{NCH}_2\text{Bu}^t)_2\text{C}_6\text{H}_4\text{-1,2}]$ with $[\text{NiCl}_2(\text{PPh}_3)_2]$, $[\text{Ni}(\text{cod})_2]$, or $[\text{PtCl}_2(\text{PPh}_3)_2]$. *Organometallics* **1998**, *17*, 5599–5601.
- (634) Cetinkaya, B.; Cetinkaya, E.; Chamizo, J. A.; Hitchcock, P. B.; Jasim, H. A.; Kucukbay, H.; Lappert, M. F. Synthesis and Structures of 1,3,1',3'-Tetrabenzyl-2,2'-biimidazolidinylidenes (Electron-Rich Alkenes), their Amino Intermediates and their Degradation Products. *J. Chem. Soc. Perkin Trans. 1* **1998**, 2047–2054.
- (635) Hitchcock, P. B.; Lappert, M. F.; Layh, M. Lithium Enamides, Beta-Diketiminates and 1,3-Diazaallyls from the 1 : 1 Insertion of an Isonitrile into the Li-C Bond of $\text{LiCH}(\text{SiMe}_3)_2$. *Chem. Commun.* **1998**, 201–202.
- (636) Hitchcock, P. B.; Lappert, M. F.; Pierssens, L. J. M. Novel $\text{Sn}^{\text{II}}\text{-Ag}^{\text{I}}$ Reactions from $\text{Sn}[\text{CH}(\text{SiMe}_3)_2]_2$ and AgX ($\text{X} = \text{NCS}, \text{CN}, \text{NCO}, \text{or I}$): $\text{Sn}^{\text{II}}\text{-Ag}^{\text{I}}$ or $\text{Sn}^{\text{IV}}\text{X}_2$ -Complexes. *Organometallics* **1998**, *17*, 2686–2688.
- (637) Hitchcock, P. B.; Lappert, M. F.; Layh, M. The Role of 1-Azaallyllithium Compounds in Phosphorus Chemistry. 2. Aspects of the Chemistry of the Cyclic Phosphonium Salt $(\text{Ph}_2\text{P}^{\text{a}}\text{P}(\text{Cl})\text{N}(\text{SiMe}_3)\text{C}(\text{tBu})=\text{C}^{\text{b}}\text{H}(\text{P}^{\text{a}}\text{-C}^{\text{b}})]\text{Cl}$ and the Related Diazadiphosphetidine $[\text{CIP}^{\text{a}}\text{N}(\text{R})\text{P}(\text{Cl})\text{N}^{\text{b}}\text{R}(\text{P}^{\text{a}}\text{-N}^{\text{b}})]$. $[\text{R} = \text{C}(\text{tBu})=\text{C}(\text{H})\text{SiMe}_3]$ *Eur. J. Inorg. Chem.* **1998**, 751–760.
- (638) Hitchcock, P. B.; Lappert, M. F.; Layh, M. Metal (Li, K, Sn^{II} and Hg^{II}) Complexes of the 1,3-Diazaallyl $[\text{N}(\text{R})\text{C}(\text{Ph})\text{NC}(\text{Ph})=\text{CR}_2]$ ($\text{R} = \text{SiMe}_3$). *J. Chem. Soc. Dalton Trans.* **1998**, 3113–3117.
- (639) Hitchcock, P. B.; Lappert, M. F.; Layh, M. Novel Lithium 3-Sila- and 3-Germa- β -diketiminates. *Chem. Commun.* **1998**, 2179–2180.
- (640) Lappert, M. F.; Layh, M. A New One-Pot Arylacetylene Synthesis: $4\text{-RC}_6\text{HC}\equiv\text{C}(\text{TMS})$ from $4\text{-RC}_6\text{H}_4\text{CN}$ and $\text{LiC}(\text{TMS})(\text{THF})_2$ via $\text{Li}[\text{N}(\text{TMS})\text{C}(\text{C}_6\text{H}_4\text{R-4})\text{C}(\text{TMS})_2](\text{THF})$ ($\text{TMS} = \text{SiMe}_3$, $\text{R} = \text{H}, \text{F}, \text{Br}, \text{OMe}$ or Bu^t). *Tetrahedron Lett.* **1998**, *39*, 4745–4748.
- (641) Drost, C.; Hitchcock, P. B.; Lappert, M. F. Stable Intramolecularly Base-Stabilized Germylene- and Stannylene-Borane Adducts: $\text{M}[\text{C}_6\text{H}_3(\text{NMe}_2)_{2-2,6}]_2\text{BH}_3$ ($\text{M} = \text{Ge}, \text{Sn}$). *Organometallics* **1998**, *17*, 3838–3840.
- (642) Caro, C. F.; Hitchcock, P. B.; Lappert, M. F.; Layh, M. Neutral Isonitrile Adducts of Alkali and Alkaline Earth Metals. *Chem. Commun.* **1998**, 1297–1298.
- (643) West, R.; Buffy, J. J.; Haaf, M.; Muller, T.; Gehrhus, B.; Lappert, M. F.; Apeloig, Y. Chemical Shift Tensors and NICS Calculations for Stable Silylenes. *J. Am. Chem. Soc.* **1998**, *120*, 1639–1640.

- (644) Antinolo, A.; Huertas, C.; del Hierro, I.; Lappert, M. F.; Otero, A.; Prashar, S.; Rodriguez, A. M.; Villasenor, E. Synthesis and Reactivity of Novel Niobocene Complexes Containing Allyl or 1-Azaallyl Ligands. X-Ray Crystal Structure of $[\text{Li}\{\eta^3\text{-N}(\text{SiMe}_3)\text{C}(\text{tBu})\text{CH}_2\}]_3$. *Organometallics* **1998**, *17*, 5874–5879.
- (645) Hitchcock, P. B.; Hu, J.; Lappert, M. F. New Dianionic Ligands $\eta^5\text{-C}_5\text{H}_4\text{SiMe}_2\text{C}(\text{H})\text{SiMe}_3$ and $\eta^5\text{-C}_5\text{H}_4\text{SiMe}_2\{\text{NC}(\text{tBu})\text{C}(\text{H})\text{SiMe}_3\}$; Syntheses, Structures and Reactivity of their Lithium and Zirconium Derivatives. *Chem. Commun.* **1998**, 143–144.
- (646) Daniele, S.; Deelman, B. J.; Hitchcock, P.; Hu, J.; Lappert, M.; Layh, M.; Liu, D-S, Sablon R, Severn, J.R. New Spectator Ligands in Transition Metal Complexes and their Application in Catalysis. in *Education in Advanced Chemistry.6* Marciniak B. Ed. **1999**,
- (647) Daniele, S.; Hitchcock, P. B.; Lappert, M. F. *meta*- and *para*-Bis[zirconyl(IV)amino]cyclophanes; 1,3- or 1,4- $\text{C}_6\text{H}_4[\text{N}(\text{SiMe}_3)]_2$ as Bridging Ligands. *Chem. Commun.* **1999**, 1909–1910.
- (648) Cardin, C. J.; Hitchcock, P. B.; Lappert, M. F.; MacBeath, C.; Warhurst, N. J. W. Divinyldisiloxane and Divinylsilane Complexes of Rhodium(I). *J. Organomet. Chem.* **1999**, *584*, 366–375.
- (649) Boesveld, W. M.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F.; Schleyer, P. V. A Crystalline Carbene-Silylene Adduct 1,2- $\text{C}_6\text{H}_4[\text{N}(\text{R})]_2\text{CSi}[\text{N}(\text{R})]_2\text{C}_6\text{H}_4$ -1,2 (R = $\text{CH}_2\text{Bu}^\dagger$); Synthesis, Structure and Bonding in Model Compounds. *Chem. Commun.* **1999**, 755–756.
- (650) Deelman, B. J.; Hitchcock, P. B.; Lappert, M. F.; Leung, W. P.; Lee, H. K.; Mak, T. C. W. Novel Zirconium and Hafnium Complexes of Monoanionic Di-*N,N'*-chelating Pyridyl- and Quinolyl-1-azaallyl Ligands and their Activity in Olefin Polymerization Catalysis. *Organometallics* **1999**, *18*, 1444–1452.
- (651) Caro, C. F.; Hitchcock, P. B.; Lappert, M. F. Monomeric Magnesium 1-Azaallyl and β -Diketiminato Complexes Derived from the Bis(trimethylsilyl)methyl Ligand: The X-Ray Structure of the Four-coordinate Planar Magnesium Complex $[\text{Mg}\{\text{N}(\text{R})\text{C}(\text{Bu}^\dagger)\text{C}(\text{H})\text{R}\}_2]$ and of $[\text{Mg}\{\{\text{N}(\text{R})\text{C}(\text{Ph})\}_2\text{CH}_2\}]$. *Chem. Commun.* **1999**, 1433–1434.
- (652) Hitchcock, P. B.; Lappert, M. F.; Leung, W. P.; Liu, D. S.; Mak, T. C. W.; Wang, Z. X. Reactions of Silylallyl-lithium or -potassium Compounds with $(\text{Bu}^\dagger\text{CN})$; Synthesis and Structures of $[\text{M}\{\text{N}(\text{SiMe}_2\text{R})\text{C}(\text{Bu}^\dagger)(\text{CH})\text{SiMe}_2\text{Bu}^\dagger\}]$ [M = Li(tmen), R = Me; or M = K, R = Bu^\dagger], $[\text{Li}\{\text{N}(\text{SiMe}_3)\text{C}(\text{Bu}^\dagger)\text{CCHC}(\text{SiMe}_3)(\text{CH}_2)_2\text{CH}_2\}(\text{tmen})]$ and $\{\text{Li}[\text{N}=\text{C}(\text{Bu}^\dagger)\text{CHCHC}(\text{SiMe}_3)(\text{CH}_2)_2\text{CH}_2]\}_4$ (tmen = $\text{Me}_2\text{NCH}_2\text{CH}_2\text{NMe}_2$). *J. Chem. Soc. Dalton Trans.* **1999**, 1263–1269.
- (653) Hitchcock, P. B.; Lappert, M. F.; Layh, M.; Klein, A. Spectroscopic and Electronic Properties of 1-azaallylmetal(I) (M = Cu or Au) Complexes; Molecular Structure of $[\{\text{Au} [\mu\text{-N}(\text{R})\text{-C}(\text{Ph})\text{CR}_2]\}_2]$ (R = SiMe_3). *J. Chem. Soc. Dalton Trans.* **1999**, 1455–1459.

- (654) Hitchcock, P. B.; Lappert, M. F.; Uiterweerd, P. G. H.; Wang, Z. X. The Synthesis and Molecular Structures of the Crystalline 1-Aza-2-Phospha(V)allyllithium Compounds $[\text{Li}(\text{LL}')(\text{OEt}_2)_2]$ and $[\text{Li}(\text{LL}')_2]$ [$\text{LL}' = \text{CH}(\text{SiMe}_3)\text{P}(\text{Ph})_2=\text{NSiMe}_3$] and the Preparation and Characterisation of the New Phosphinimines $\text{CH}(\text{R}^1)(\text{R}^2)\text{P}(\text{Ph})_2=\text{NSiMe}_3$ [$\text{R}^1 = \text{R}^2 = \text{SiMe}_3$, $\text{R}^1 = \text{H}$, $\text{R}^2 = \text{SiMe}_2\text{NEt}_2$]. *J. Chem. Soc. Dalton Trans.* **1999**, 3413–3417.
- (655) Drost, C.; Hitchcock, P. B.; Lappert, M. F. Thermally Stable Heterobinuclear Bivalent Group 14 Metal Complexes $\text{Ar}_2\text{MSn}[1,8-(\text{NR})_2\text{C}_{10}\text{H}_6]$ ($\text{M} = \text{Ge}, \text{Sn}$; $\text{Ar} = 2,6-(\text{Me}_2\text{N})_2\text{C}_6\text{H}_3$, $\text{R} = \text{CH}_2^t\text{Bu}$). *Angew. Chem. Int. Ed. Engl.* **1999**, *38*, 1113–1116.
- (656) Cassani, M. C.; Gun'ko, Y. K.; Hitchcock, P. B.; Lappert, M. F.; Laschi, F. Synthesis and Characterization of Organolanthanidocene(III) ($\text{Ln} = \text{La}, \text{Ce}, \text{Pr}, \text{Nd}$) Complexes containing the 1,4-Cyclohexa-2,5-dienyl Ligand (Benzene 1,4-Dianion): Structures of $[\text{K}([18\text{-crown-6})][\text{Ln}\{\eta^5\text{-C}_5\text{H}_3(\text{SiMe}_3)_2\text{-1,3}\}_2(\text{C}_6\text{H}_6)]$ [$\text{Cp}'' = \eta^5\text{-C}_5\text{H}_3(\text{SiMe}_3)_2\text{-1,3}$; $\text{Ln} = \text{La}, \text{Ce}, \text{Nd}$]. *Organometallics* **1999**, *18*, 5539–5547.
- (657) Boesveld, W. M.; Hitchcock, P. B.; Lappert, M. F. Reactions of 1,3,5-Triazine with Organolithium Compounds Containing Trimethylsilyl Substituents; X-Ray Structures of 1,3,5-Triaza- and 1,3,5,7-Tetraaza-heptatrienyllithium Compounds. *J. Chem. Soc. Dalton Trans.* **1999**, 4041–4046.
- (658) Hitchcock, P. B.; Lappert, M. F.; Leung, W. P.; Liu, D. S.; Mak, T. C. W.; Wang, Z. X. Synthesis and Structures of some Silylallyl-Lithium or -Potassium Complexes. *J. Chem. Soc. Dalton Trans.* **1999**, 1257–1262.
- (659) Cui, C. M.; Roesky, H. W.; Noltemeyer, M.; Lappert, M. F.; Schmidt, H. G.; Hao, H. J. Synthesis and Structures of mono(1-Aza-allyl) Complexes of Aluminum. *Organometallics* **1999**, *18*, 2256–2261.
- (660) Hitchcock, P. B.; Lappert, M. F.; Layh, M. A 1-Aza-2-silacyclobut-3-ene and an Alkyne from $[\text{Li}\{\text{Si}(\text{SiMe}_3)_3\}(\text{thf})_3]$ and the Isocyanide $2,6\text{-Me}_2\text{C}_6\text{H}_3\text{NC}$. *Angew. Chem. Int. Ed. Engl.* **1999**, *38*, 501–504.
- (661) Gehrhus, B.; Hitchcock, P. H.; Kennedy, A. R.; Lappert, M. F.; Mulvey, R. E.; Rodger, P. J. A. Synthesis and Crystal Structure of Trimeric Sodium 2,2,6,6-Tetramethylpiperidide (NaTMP). *J. Organomet. Chem.* **1999**, *587*, 88–92.
- (662) Al-Juaid, S.; Gun'ko, Y. K.; Hitchcock, P. B.; Lappert, M. F.; Tian, S. Organolanthanide Chemistry with Bis(trimethylsilyl)methyl- and tert-Butyldimethylsilyl-substituted Cyclopentadienyl Ligands. Synthesis and Characterisation of tris(cyclopentadienyl)lanthanide(III) Complexes, including Crystal Structures of $[\text{Ln}\{\eta^5\text{-C}_5\text{H}_4\text{CH}(\text{SiMe}_3)_2\}_3]$ ($\text{Ln} = \text{Nd}$ or Tm) and $[\text{Ce}\{\eta^5\text{-C}_5\text{H}_3(\text{SiMe}_2\text{Bu})_2\text{-1,3}\}_3]$. *J. Organomet. Chem.* **1999**, *582*, 143–152.
- (663) Bourget, L.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Structures of Neutral and Cationic 1-Azaallylaluminium Methyls. *J. Chem. Soc. Dalton Trans.* **1999**, 2645–2646.

- (664) Cosledan, F.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Structures of Neutral and Cationic β -Diketiminatoaluminium Methyls. *Chem. Commun.* **1999**, 705–706.
- (664a) Lappert, M. F. Progress Report *J. Organomet. Chem.* **2000**, 600, 144–158
- (665) Hitchcock, P. B.; Lappert, M. F.; Lawless, G. A.; de Lima, G. M.; Pierssens, L. J. M. Synthesis and Structural Characterisation of Bis(trimethylsilyl)amidotin(II) Triflate [$\{\text{Sn}(\text{NR}_2)(\mu\text{-}\eta^2\text{-OTf})_2\}_\infty$ (R = SiMe₃, -OTf = -OSO₂CF₃). *J. Organomet. Chem.* **2000**, 601, 142–146.
- (666) Hitchcock, P. B.; Lappert, M. F.; Maciejewski, H. A Convenient Route to Vinylsiloxane-Tertiary Phosphine-nickel(0) Complexes; the Molecular Structure of $[(\text{Ni}\{\text{P}(\text{C}_6\text{H}_4\text{Me-4})_3\}_2\{\mu\text{-}(\text{L}^{\text{L}^{\prime})}\}_2\{\text{L}^{\text{L}^{\prime\prime}}\})_2 = [\text{CH}_2=\text{CH}(\text{Me})\text{Si}(\mu\text{-O})_4]_4$. *J. Organomet. Chem.* **2000**, 605, 221–225.
- (667) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F.; Slootweg, J. C. The Diverse Reactions of the Silylene $\text{Si}[(\text{NCH}_2\text{Bu}^t)_2\text{C}_6\text{H}_4\text{-1,2}]$ with $\text{Li}[\text{Si}(\text{SiMe}_3)_3](\text{thf})_3$ and $\text{K}[\text{N}(\text{SiMe}_3)_2]$. *Chem. Commun.* **2000**, 1427–1428.
- (668) Gun'ko, Y. K.; Hitchcock, P. B.; Lappert, M. F. Nonclassical Organolanthanoid Metal Chemistry: $[\text{K}([18\text{-crown-6})(\eta^2\text{-PhMe})_2)]\text{X}$ (X = $[(\text{LnCp}^t)_2(\mu\text{-H})]$, $[(\text{LnCp}^{\text{R}^{\prime\prime}})_2(\mu\text{-}\eta^6\text{-PhMe})]$) from $[\text{LnCp}^x_3]$, K, and [18]-crown-6 in Toluene (Ln = La, Ce; Cp^t = $\eta^5\text{-C}_5\text{H}_4\text{SiMe}_2\text{Bu}^t$; Cp^{R''} = $\eta^5\text{-C}_5\text{H}_3(\text{SiMe}_3)_{2-1,3}$) *Organometallics* **2000**, 19, 2832–2834.
- (669) Boesveld, W. M.; Hitchcock, P. B.; Lappert, M. F.; Liu, D. S.; Tian, S. Synthesis and Structures of the Crystalline Heavier Alkali Metal Alkyls: X-Ray Structures of $[\text{K}(\mu\text{-R})\{\text{O}(\text{Me})\text{Bu}^t\}]_\infty$, $[(\text{pmdeta})\text{K}(\mu\text{-R})\text{K}(\mu\text{-R})_2\text{K}(\mu\text{-R})\text{K}(\text{pmdeta})]$, and $[\text{Cs}(\mu\text{-R})(\text{tmeda})]_\infty$ (R = CH(SiMe₃)₂). *Organometallics* **2000**, 19, 4030–4035.
- (670) Hitchcock, P. B.; Lappert, M. F.; Tian, S. Lanthanocene Chemistry with $[\text{Cp}^{\text{R}}]^-$, $[\text{Cp}^t]^-$, $[\text{Cp}^{\text{H}}]^-$, and $[(\text{Cp}^{\text{R}^{\prime}})_2\text{SiMe}_2]^{2-}$ Ligands: Synthesis and Characterization of bis(cyclopentadienyl)lanthanide(III) halides and bis(cyclopentadienyl)lanthanide(II) Complexes and Crystal Structures. *Organometallics* **2000**, 19, 3420–3428.
- (671) Cai, X. P.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. Reactions of the Stable Bis(amino)silylene $\text{Si}\{[\text{N}(\text{CH}_2^t\text{Bu})]_2\text{C}_6\text{H}_4\text{-1,2}\}$ with Group 3 or Lanthanide Metal Organic Compounds. Crystal Structures of $[\text{Ln}(\eta^5\text{-C}_5\text{H}_5)_3\text{Si}\{[\text{N}(\text{CH}_2^t\text{Bu})]_2\text{C}_6\text{H}_4\text{-1,2}\}]\cdot\text{C}_7\text{H}_8$ (Ln = Y or Yb). *Can. J. Chem.* **2000**, 78, 1484–1490.
- (672) Hinchley, S. L.; Morrison, C. A.; Rankin, D. W. H.; Macdonald, C. L. B.; Wiacek, R. J.; Cowley, A. H.; Lappert, M. F.; Gundersen, G.; Clyburne, J. A. C.; Power, P. P. Persistent Phosphinyl Radicals from a Bulky Diphosphine. An Example of a Molecular Jack-in-the-Box. *Chem. Commun.* **2000**, 2045–2046.
- (673) Farwell, J. D.; Lappert, M. F.; Marschner, C.; Strissel, C.; Tilley, T. D. The First Structurally Characterised Oligosilylmagnesium Compound. *J. Organomet. Chem.* **2000**, 603 (2), 185–188.
- (673a)

- Hitchcock P. B., Lappert M. F., Layh M., Liu D-S, Sablong, R., Shun T. Reactions of LiCHR_2 and related lithium alkyls with α -H-free nitriles and the crystal structures of eleven representative lithium 1,3-diazaallyls, 1-azaallyls and β -diketiminates *J. Chem. Soc. Dalton Trans.* **2000**, 2301-2312
- (674) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. Crystalline (NN)C-M(NN) Complexes: Synthesis, Structure, Bonding and Lability [M = Si, Ge, Sn or Pb; (NN) = 1,2-((Bu^tCH₂N)₂C₆H₄)]. *J. Chem. Soc. Dalton Trans.* **2000**, 3094–3099.
- (675) Boesveld, W. M.; Hitchcock, P. B.; Lappert, M. F.; Nöth, H. Synthesis and Structures of 1,3,5,7-Tetraazaheptatrienylsodium and -thallium(I). *Angew. Chem. Int. Ed. Engl.* **2000**, 39, 222-224.
- (676) Hitchcock, P. B.; Lappert, M. F.; Prashar, S. Syntheses and Crystal Structures of Two Ytterbocene Complexes [Yb(η -Cp^{''})₂I(THF)] and [Yb(η -Cp^{''})₂(μ -Cl)₂Li(THF)₂] (Cp^{''} = C₅H₃(SiMe₃)₂-1,3). *J. Organomet. Chem.* **2000**, 613, 105–110.
- (677) Daniele, S.; Hubert-Pfalzgraf, L. G.; Hitchcock, P. B.; Lappert, M. F. Thermal Condensation of Trinuclear Lanthanide Butoxides. Molecular Structure of La₅(μ^5 -O)(μ^3 -(OBu^t)₄(μ -(OBu^t)₄)(OBu^t)₅). *Inorg. Chem. Commun.* **2000**, 3, 218–220.
- (678) Hitchcock, P. B.; Lappert, M. F.; Layh, M. 1-Azaallyl Complexes of Ni^{II}, Pd^{II}, and Ti^{III}. *Z. Anorg. Allg. Chem.* **2000**, 626, 1081–1086.
- (679) Doyle, D.; Gun'ko, Y. K.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Structures of Lithium, Aluminium, Gallium and Lanthanide Amidinates containing a γ -Pendant Amine Functionality. *J. Chem. Soc. Dalton Trans.* **2000**, 4093–4097.
- (680) Fernandez-Galan, R.; Hitchcock, P. B.; Lappert, M. F.; Antinolo, A.; Rodriguez, A. M. Synthesis and Structural Characterisation of New *ansa*-Bis(propene)s and {*ansa*-Bis(allyl)}alkali Metal and {*ansa*-Bis(allyl)}transition Metal Complexes. *J. Chem. Soc. Trans.* **2000**, 1743–1749.
- (681) Antolini, F.; Hitchcock, P. B.; Lappert, M. F.; Merle, P. Unusual Alkali Metal α - or β -Phenyl(trimethylsilyl)amides. *Chem. Commun.* **2000**, 1301–1302.
- (682) Bezombes, J. P.; Hitchcock, P. B.; Lappert, M. F.; Merle, P. G. Synthesis and Structures of Lithium *N*-Trimethylsilyl- and -Neopentyl-anilides and their Et₂O and tmen Adducts; Crystal Structures of [(Li{ μ -N(Ph)R}₂(μ -tmen))]_∞ (R = SiMe₃ or CH₂Bu^t) and [Li{ μ -N(Ph)CH₂Bu^t}(OEt₂)₂]. *J. Chem. Soc. Dalton Trans.* **2001**, 816–821.
- (683) Bourget-Merle, L.; Hitchcock, P. B.; Lappert, M. F. Novel Metal Complexes Containing 1-Azaallyl and β -Diketiminato Ligands. *Phosphorus Sulfur Silicon Relat. Elem.* **2001**, 168, 609–612.
- (684) Daniele, S.; Drost, C.; Gehrhus, B.; Hawkins, S. M.; Hitchcock, P. B.; Lappert, M. F.; Merle, P. G.; Bott, S. G. Synthesis and Structures of Crystalline Dilithium Diamides and Aminolithium Amides derived from *N,N'*-Disubstituted 1,2-Diaminobenzenes or 1,8-Diaminonaphthalene. *J. Chem. Soc. Dalton Trans.* **2001**, 3179–3188.

- (685) Hitchcock, P. B.; Lappert, M. F.; Protchenko, A. V. The First Crystalline Alkali Metal Salt of a Benzenoid Radical Anion without a Stabilizing Substituent and of a Related Dimer: X-Ray Structures of the Toluene Radical Anion and of the Benzene Radical Anion Dimer Potassium-Crown Ether Salts. *J. Am. Chem. Soc.* **2001**, *123*, 189–190.
- (686) Gehrhus, B.; Lappert, M. F. Chemistry of Thermally Stable Bis(amino)silylenes. *J. Organomet. Chem.* **2001**, *617*, 209–223.
- (687) Caro, C. F.; Lappert, M. F.; Merle, P. G. Review of Metal 1-Azaallyl Complexes. *Coord. Chem. Rev.* **2001**, *219*, 605–663.
- (688) Daniele, S.; Hitchcock, P. B.; Lappert, M. F.; Merle, P. G. Synthesis, Structures and Catalytic Properties of Chelating N,N`-Bis(silylated) 1,2-benzenediamidozirconium(IV) Chlorides [and a titanium(IV) Analogue] and Dimethylamides. *J. Chem. Soc. Dalton Trans.* **2001**, 13–19.
- (689) Eisenstein, O.; Hitchcock, P. B.; Hulkes, A. G.; Lappert, M. F.; Maron, L. Cerium Masquerading as a Group 4 Element: Synthesis, Structure and Computational Characterisation of [CeCl{N(SiMe₃)₂}₃]. *Chem. Commun.* **2001**, 1560–1561.
- (690) Blake, P. C.; Edelstein, N. M.; Hitchcock, P. B.; Kot, W. K.; Lappert, M. F.; Shalimoff, G. V.; Tian, S. Synthesis, Properties and Structures of the Tris(cyclopentadienyl)thorium(III) Complexes [Th{η⁵-C₅H₃(SiMe₂R)₂-1,3} ₃] (R = Me or Bu^t). *J. Organomet. Chem.* **2001**, *636*, 124–129.
- (691) Hitchcock, P. B.; Lappert, M. F.; Layh, M. The Reactions of Lithium Trimethylsilylmethyls with Isocyanides; Structures and Reactions of the Derived Lithium 1-Azaallyls, β-Diketiminates and a 1-Azabuta-1,3-dienyl-3-amide. *J. Chem. Soc. Dalton Trans.* **2001**, 2409–2416.
- (692) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. The Thermally Stable Silylene Si[(NCH₂Bu^t)₂C₆H₄-1,2]: Reactions with Bu^tCN, AdCN, Bu^tNC, AdN₃, and Me₃SiN₃ (Ad = 1-Adamantyl). *Z. Anorg. Allg. Chem.* **2001**, *627*, 1048–1054.
- (693) Hinchley, S. L.; Morrison, C. A.; Rankin, D. W. H.; Macdonald, C. L. B.; Wiacek, R. J.; Voigt, A.; Cowley, A. H.; Lappert, M. F.; Gundersen, G.; Clyburne, J. A. C.; Power, P. P. Spontaneous Generation of Stable Pnictinyl Radicals from “Jack-in-the-Box” Dipnictines: A Solid-State, Gas-Phase, and Theoretical Investigation of the Origins of Steric Stabilization. *J. Am. Chem. Soc.* **2001**, *123*, 9045–9053.
- (694) Hitchcock, P. B.; Lappert, M. F.; Merle, P. G. Li, Al, Sn and Zr Complexes of Bidentate N,N`-centred Ligands. *Phosphorus Sulfur Silicon Relat. Elem.* **2001**, *168*, 363–366.
- (695) Boesveld, W. M.; Hitchcock, P. B.; Lappert, M. F. Substituted Triazines and Pyrimidines from 1,3,5-Triazine and a Lithium Amidinate, Alkyl- or 1-Azaallyl. *J. Chem. Soc. Perkin Trans.1*, **2001**, 1103–1108.

- (696) Hitchcock, P. B.; Lappert, M. F.; Liu, D. S.; Sablong, R. Syntheses and Structures of Structurally Diverse Potassium β -Diketiminates derived from the Ligand $[\{N(\text{SiMe}_3)\text{C}(\text{Ph})_2\text{CH}\}]^-$. *Chem. Commun.* **2002**, 1920–1921.
- (697) Bowen, R. J.; Fernandes, M. A.; Hitchcock, P. B.; Lappert, M. F.; Layh, M. Synthesis and Crystal Structures of Novel 1-Aza-2-silacyclobut-3-enes *J. Chem. Soc. Dalton Trans.* **2002**, 3253–3259.
- (698) Cassani, M. C.; Gun'ko, Y. K.; Hitchcock, P. B.; Hulkes, A. G.; Khvostov, A. V.; Lappert, M. F.; Protchenko, A. V. Aspects of Non-Classical Organolanthanide Chemistry. *J. Organomet. Chem.* **2002**, *647*, 71–83.
- (699) Lappert, M. F.; Evans, W. J. Recent Advances in the Organometallic Chemistry of Group 3 and Lanthanoid Elements - Introduction to This Special Issue. *J. Organomet. Chem.* **2002**, *647*, 1.
- (700) Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F.; Protchenko, A. V. Ytterbium(II) Amides and Crown Ethers: Addition versus Amide Substitution. *J. Organomet. Chem.* **2002**, *647*, 198–204.
- (701) Cai, X. P.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F.; Slootweg, J. C. Erratum to The Stable Silylene $\text{Si}[\{(\text{NCH}_2\text{Bu}^t)_2\text{C}_6\text{H}_4-1,2\}]$: Insertion into Li-C or Li-Si Bonds of Lithium Alkyls LiR or $[\text{LiSi}(\text{SiMe}_3)_3(\text{THF})_3]$ [$\text{R} = \text{Me}, \text{Bu}^t$ or $\text{CH}(\text{SiMe}_3)_2$] *J. Organomet. Chem.* **2002**, *643-644*, 272–277.
- (702) Gun'ko, Y. K.; Elliott, S. D.; Hitchcock, P. B.; Lappert, M. F. The First Mixed Valence Cerium–Organic Trinuclear Cluster $[\text{Ce}_3(\text{OBut})_{10}\text{NO}_3]$ as a Possible Molecular Switch: Synthesis, Structure and Density Functional Calculations. *J. Chem. Soc. Dalton Trans.* **2002**, 1852–1856.
- (703) Lappert, M. F.; Antolini, F.; Bourget-Merle, L.; Gehrhus, B.; Hitchcock, P. B.; Merle, P. G.; Sablong, R.; Severn, J. R.; Wei, X. H. Studies in 1-Azaallylmetal Chemistry. *Abstr. Pap. Am. Chem. Soc.* **2002**, *224* (1), U653.
- (704) Cornu, D.; Hitchcock, P. B.; Lappert, M. F.; Uiterweerd, P. G. H. Some 2,6-Bis(dimethylamino)phenyl-mercury(II) and -Boron Complexes. *Polyhedron* **2002**, *21*, 635–640.
- (705) Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F. Synthesis and Structures of Crystalline Bis(trimethylsilyl)methanido Complexes of Potassium, Calcium and Ytterbium. *J. Organomet. Chem.* **2002**, *663*, 263–268.
- (706) Farwell, J. D.; Hitchcock, P. B.; Lappert, M. F. Sodium and Potassium 3-Sila- β -Diketiminates show New Coordination Modes. *Chem. Commun.* **2002**, 456–457.
- (707) Antolini, F.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Structure of an Azatrisilacyclobutane and its Precursor, a Novel Lithium Enamide having a Tricyclic $(\text{LiNSiO})_2$ Skeleton. *Angew. Chem. Int. Ed. Engl.* **2002**, *41* 2568–2571

- (708) Bowen, R. J.; Fernandes, M. A.; Hitchcock, P. B.; Lappert, M. F.; Layh, M. Synthesis and Crystal Structures of Novel 1-Aza-2-silacyclobut-3-enes.. *J. Chem. Soc. Dalton Trans.* **2002**, 3253–3259.
- (709) Drost, C.; Hitchcock, P. B.; Lappert, M. F. Unprecedented Oxidative Chlorosilylation Addition Reactions to a Diarylgermylene and -Stannylene. *Organometallics* **2002**, *21*, 2095–2100.
- (710) Avent, A. G.; Khvostov, A. V.; Hitchcock, P. B.; Lappert, M. F. Unusual Crystalline Heterobimetallic Trinuclear β -Diketiminates $[\text{Yb}\{\text{L}(\mu\text{-Li}(\text{thf}))_2\}_2]$ and $[\text{Yb}\{\text{L}'(\mu\text{-Li}(\text{thf}))_2\}] \cdot \text{thf}$ [$\text{L}, \text{L}' = \{\text{N}(\text{SiMe}_3)\text{C}(\text{R})\}_2\text{CH}$, $\text{R} = \text{Ph}, \text{C}_6\text{H}_4\text{Ph-4}$]. *Chem. Commun.* **2002**, 1410–1411.
- (711) Daniele, S.; Hitchcock, P. B.; Lappert, M. F.; Nile, T. A.; Zdanski, C. M. Synthesis and Structures of Dinuclear Low-coordinate Lithium and Zirconium(IV) Complexes derived from the Diamido Ligands 1,3-($\text{CH}_2(\text{N}^-\text{R}^1)\text{C}_6\text{H}_3\text{R}^1_2$) $_2\text{C}_6\text{H}_4$ ($\text{R}^1 = \text{Me}$ or Pr^i). *J. Chem. Soc. Dalton Trans.* **2002**, 3980–3984.
- (712) Bourget-Merle, L.; Lappert, M. F.; Severn, J. R. The Chemistry of β -Diketiminatometal Complexes. *Chem. Rev.* **2002**, *102*, 3031–3065.
- (713) Antolini, F.; Hitchcock, P.B; Lappert, M.F; Wei, X.-H. Synthesis and Structures of Crystalline Lithium, Sodium, Potassium and Magnesium Silylmethyls derived from the Ligands $[\text{CH}(\text{SiMe}_3)(\text{SiMe}_{3-n}(\text{OMe})_n)]^-$ ($n = 1, 2$) $[\text{CH}(\text{SiMe}_2\text{OMe})_2]^-$ and $[\text{CH}(\text{SiMe}_3)(\text{SiMe}_2\text{Ph})]^-$. *Organometallics* **2003**, *22*, 2505–2516.
- (714) Bourget-Merle, L.; Drost, C.; Hitchcock, P.; Lappert, M.; Hu, J.; Pierssens, L.-M.; Severn, J.; Uiterweerd, P.; Wang, Z.-X. in *Chemistry and Applications of Alkoxy, Aryloxy and Allied Derivatives of Elements* Bohra, R., Singh, A., Mehrotra, R., Eds.; RBSA Publishers: Jaipur, **2003**, pp 42-55
- (715)
- (716) Hitchcock, P. B.; Hulkes, A. G.; Khvostov, A. V.; Lappert, M. F.; Protchenko, A. V. Researches on Non-Classical Organolanthanide Chemistry. in *Perspectives in Organometallic Chemistry*, Screttas, C, G and Steele, B. R, Eds The Royal Society of Chemistry **2003**; pp 86–99.
- (717) Avent, A. G.; Davies, M. J.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Characterization of a Series of 1,2-Phenylenedioxoborylcyclopentadienes. *Z. Anorg. Allg. Chem.* **2003**, *629*, 1358–1366.
- (718) Perrin, L.; Maron, L.; Eisenstein, O.; Lappert, M. F. γ -Agostic C-H or β -Agostic Si-C Bonds in $\text{La}\{\text{CH}(\text{SiMe}_3)_2\}_3$? A DFT Study of the Role of the Ligand. *New J. Chem.* **2003**, *27*, 121–127.
- (719) Avent, A. G.; Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F.; Protchenko, A. V. Synthesis and Structures of the Ytterbium(II) β -Diketiminates $[\text{Yb}\{\text{N}(\text{SiMe}_3)\text{C}(\text{R}^2)\text{C}(\text{H})\text{C}(\text{R}^4)\text{N}(\text{SiMe}_3)\}_2]$ ($\text{R}^2 = \text{R}^4 = \text{Ph}, \text{C}_6\text{H}_4\text{Me-4}$, or $\text{C}_6\text{H}_4\text{Ph-4}$; or $\text{R}^2 = \text{C}_6\text{H}_4\text{Me-4}$, $\text{R}^4 = 1\text{-adamantyl}$). *Dalton. Trans.* **2003**, 1070–1075.

- (720) Farwell, J. D.; Fernandes, M. A.; Hitchcock, P. B.; Lappert, M. F.; Layh, M.; Omondi, B. Synthesis, Crystal Structures and Reactions of Sila- and Germa- β -Diketiminates. *Dalton Trans.* **2003**, 1719–1729.
- (721) Antolini, F.; Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F. Synthesis and Structures of Alkali Metal Amides derived from the Ligands $[\text{N}(\text{SiMe}_2\text{Ph})(\text{SiMe}_3)]^-$, $[\text{N}(\text{tBu})(\text{SiMe}_3)]^-$, $[\text{N}(\text{Ph})(2\text{-C}_5\text{H}_4\text{N})_2]^-$ and $[\text{N}(2\text{-C}_5\text{H}_4\text{N})_2]^-$. *Eur. J. Inorg. Chem.* **2003**, 3391–3400.
- (722) Avent, A. G.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F.; Maciejewski, H. Synthesis and Characterisation of Bis(amino)silylene-nickel(0), -palladium(II), -platinum(0), -platinum(II) and copper(I) Complexes. *J. Organomet. Chem.* **2003**, 686 321–331.
- (723) Bezombes, J. P.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F.; Merle, P. G. A Comparative Study of the Behaviour of *N*-Trimethylsilyl and *N*-Neopentyl-Anilines and 1,2-Diaminobenzenes towards Trimethylalane; X-Ray Structures of Nine Al-N Compounds. *Dalton Trans.* **2003**, 1821–1829.
- (724) Hitchcock, P. B.; Lappert, M. F.; Wei, X. H. Synthesis and Structures of Crystalline Lithium 1-Azaallyls and a 1,3-Diazaallyl derived from $\text{Li}\{\text{CH}(\text{SiMe}_3)(\text{SiMe}_3\text{-n}(\text{OMe})_n)\}$ ($n = 1$ or 2) and $\text{Li}\{\text{CH}(\text{SiMe}_2\text{OMe})_2\}$ and RCN ($\text{R} = \text{Bu}^t, \text{Ph}, 2,5\text{-Me}_2\text{C}_6\text{H}_3$, or Ad). *J. Organomet. Chem.* **2003**, 68, 83–91.
- (725) Hitchcock, P. B.; Lappert, M. F.; Nycz, J. E. Synthesis, Structure and Reductive Dechlorination of the *C*-centred phosphorus(III) β -Diketimate $\text{PCl}(\text{Ph})\text{L}$ [$\text{L} = \text{C}\{\text{C}(\text{Me})\text{NC}_6\text{H}_3\text{Pr}^{1,2-2,6}\}\{\text{C}(\text{Me})\text{NHC}_6\text{H}_3\text{Pr}^{1,2-2,6}\}$]. *Chem. Commun.* **2003**, 1142–1143.
- (726) Eisenstein, O.; Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F.; Maron, L.; Perrin, L.; Protchenko, A. V. Mono-, Di-, and Trianionic β -Diketimate Ligands: A Computational Study and the Synthesis and Structure of $[(\text{YbL})_3(\text{THF})]$, $\text{L} = \{[\text{N}(\text{SiMe}_3)\text{C}(\text{Ph})_2\text{CH}]\}$. *J. Am. Chem. Soc.* **2003**, 125, 10790–10791.
- (727) Fernandes, M. A.; Lappert, M. F.; Layh, M.; Omondi, B. An *N*-Lithio-indole from the Reaction of $\text{LiCH}(\text{TMS})_2$ and PhNC . *Chem. Commun.* **2003**, 656–657.
- (728) Lappert, M. F.; Murrell, J. N. John Dalton, the Man and his Legacy: The Bicentenary of his Atomic Theory. *Dalton Trans.* **2003**, 3811–3820.
- (729) Liang, K.; Zhen, H.; Song, Y.; Lappert, M.; Li, Y.; Huang, Z. Self-Assembly of Interpenetrating Coordination Nets Formed from Interpenetrating Cationic and Anionic Three-Dimensional Diamondoid Cluster Coordination Polymers. *Angew. Chem. Int. Ed.* **2004**, 43, 5776–5779.
- (730) Avent, A. G.; Drost, C.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. Synthetic and Structural Studies on the Cyclic Bis(amino)stannylenes $\text{Sn}[(\text{NR})_2\text{C}_{10}\text{H}_6\text{-1,8}]$ and their Reactions with SnCl_2 or $\text{Si}[(\text{NCH}_2\text{Bu}^t)_2\text{C}_6\text{H}_4\text{-1,2}]$ ($\text{R} = \text{SiMe}_3$ or CH_2Bu^t). *Z. Anorg. Allg. Chem.* **2004**, 630, 2090–2096.

- (731) Hitchcock, P. B.; Huang, Q. G.; Lappert, M. F.; Wei, X. H. Lanthanide Metal Amides Revisited; the Use of the 2,2,6,6-Tetramethylpiperidinato (TMP) Ligand. *J. Mater. Chem.* **2004**, *14*, 3266–3273.
- (732) Hitchcock, P. B.; Hu, J.; Lappert, M. F.; Severn, J. R. Synthesis and Structures of β -diketiminatotin(II) Halides, an Amide and of $\text{Sn}(=\text{E})[\{\text{N}(\text{R})\text{C}(\text{Ph})\}_2\text{CH}\}(\text{NR}_2)$ (E = S or Se, R = SiMe₃). *Dalton Trans.* **2004**, 4193–4201.
- (733) Lappert, M. F. 40th Anniversary Issue dedicated to Professor Colin Eaborn: Preface. *J. Organomet. Chem.* **2004**, *689*, 3853–3854.
- (734) Lappert, M. F.; Bourget-Merle, L.; Doyle, D.; Hitchcock, P. B.; Khvostov, A. V.; Protchenko, A. V.; Wei, X. H. β -Diketiminates of some Main Group Elements: New Structural Motifs. *Abstr. Pap. Am. Chem. Soc.* **2004**, 227 (1), U1433.
- (735) Avent, A. G.; Caro, C. F.; Hitchcock, P. B.; Lappert, M. F.; Li, Z. N.; Wei, X. H. Synthetic and Structural Experiments on Yttrium, Cerium and Magnesium Trimethylsilylmethyls and their Reaction Products with Nitriles; with a Note on Two Cerium γ -Diketiminates. *Dalton Trans.* **2004**, 1567–1577.
- (736) Avent, A. G.; Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F.; Protchenko, A. V. Reactions of Li- and Yb-Coordinated *N,N*'-Bis(trimethylsilyl)- β -diketiminates: One- and Two-Electron Reductions, Deprotonation, and C-N Bond Cleavage. *Dalton Trans.* **2004**, 2272–2280.
- (737) Bezombes, J. P.; Hitchcock, P. B.; Lappert, M. F.; Nycz, J. E. Synthesis and P-P Cleavage Reactions of $[\text{P}(\text{X})\text{X}']_2$; X-Ray Structures of $[\text{Co}\{\text{P}(\text{X})\text{X}'\}(\text{CO})_3]$ and $\text{P}_4\{\text{P}(\text{X})\text{X}'\}_2$ [X = N(SiMe₃)₂, X' = NPrⁱ₂]. *Dalton Trans.* **2004**, 499–501.
- (738) Hitchcock, P. B.; Hulkes, A. G.; Lappert, M. F. Oxidation in Nonclassical Organolanthanide Chemistry: Synthesis, Characterization, and X-Ray Crystal Structures of Cerium(III) and -(IV) Amides. *Inorg. Chem.* **2004**, *43*, 1031–1038.
- (739) Avent, A. G.; Hitchcock, P. B.; Lappert, M. F.; Sablong, R.; Severn, J. R. Synthesis, Structures, Characterization, Dynamic Behavior, and Reactions of Novel Late Transition Metal(II) 1-Azaallyls. *Organometallics* **2004**, *23*, 2591–2600.
- (740) Hitchcock, P. B.; Hulkes, A. G.; Lappert, M. F.; Li, Z. N. Cerium(III) Dialkyldithiocarbamates from $[\text{Ce}\{\text{N}(\text{SiMe}_3)_2\}_3]$ and Tetraalkylthiuram Disulfides, and $[\text{Ce}(\kappa^2\text{S}_2\text{CNEt}_2)_4]$ from the Ce^{III} Precursor; Tb^{III} and Nd^{III} Analogues. *Dalton Trans.* **2004**, 129–136.
- (741) Bezombes, J. P.; Borisenko, K. B.; Hitchcock, P. B.; Lappert, M. F.; Nycz, J. E.; Rankin, D. W. H.; Robertson, H. E. Structures of the Radical $\text{P}[\text{N}(\text{SiMe}_3)_2](\text{NPr}^i)_2$, its Dimer, Cation and Chloro Derivative. *Dalton Trans.* **2004**, 1980–1988.
- (742) Bourget-Merle, L.; Hitchcock, P. B.; Lappert, M. F. Metal β -Diketiminates Revisited: *ansa*-CH₂-bridged Bis(β -diketimate)s of Lithium and Aluminium Having Diverse Structures. *J. Organomet. Chem.* **2004**, *689*, 4357–4365.

- (743) Hitchcock, P. B.; Lappert, M. F.; Wei, X. H. Synthesis and Structures of Four Crystalline Lithium β -Diketiminates derived from $[\text{Li}\{\text{CH}(\text{SiMe}_3)(\text{SiMe}_2\text{OMe})\}]_8$ and PhCN or Bu^tCN and PhCN. *J. Organomet. Chem.* **2004**, 689, 1342–1349.
- (744) Cox, H.; Hitchcock, P. B.; Lappert, M. F.; Pierssens, L. J. M. A 1,3-Diaza-2,4-distannacyclobutanediide: Synthesis, Structure, and Bonding. *Angew. Chem. Int. Ed.* **2004**, 43, 4500–4504.
- (745) Gok, Y.; Cetinkaya, E.; Ozdemir, I.; Cetinkaya, B.; Lappert, M. F. Synthesis and Characterisation of *N*-Functionalized Enetetramines, and their Properties. *Acta Chim. Slov.* **2004**, 51, 437–446.
- (746) Zheng, H. G.; Zhou, J. L.; Lappert, M. F.; Song, Y. L.; Li, Y. Z.; Xin, X. Q. Crystal Structure and Excited Optical Nonlinearity of a 1D Polymeric $[\text{W}_2\text{O}_2\text{S}_6\text{Cu}_4(\text{NCMe})_4]_n$ Cluster. *Eur. J. Inorg. Chem.* **2004**, 2754–2758.
- (747) Antolini, F.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F.; Slootweg, J. C. Reaction of the Silylene $\text{Si}[(\text{NCH}_2\text{Bu}^t)_2\text{C}_6\text{H}_4\text{-1,2}]$ with the Alkali Metal Silylamides $\text{M}[\text{N}(\text{SiMe}_3)\text{R}]$ (M = Li, Na or K; R = SiMe₃ or SiMe₂Ph). *Dalton Trans.* **2004**, 3288–3294.
- (748) Lappert, M. F.; Cheng, Y. X.; Hitchcock, P. B.; Khvostov, A. V.; Li, G. Some Unusual Reactions of β -Diketiminates. *Abstr. Pap. Am. Chem. Soc.* **2005**, 230, U2128--U2129.
- (749) Cheng, Y. X.; Hitchcock, P. B.; Lappert, M. F.; Zhou, M. S. Synthesis and Characterisation of Two Monomeric Crystalline thallium(I) β -Diketiminates. *Chem. Commun.* **2005**, 752–754.
- (750) Cassani, M. C.; Davies, M. J.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Characterisation of a Series of 1,2-Phenylenedioxoborylcyclopentadienyl-Metal Complexes [Ti(IV), Zr(IV), Hf(IV), La(III), Ce(III), Yb(III), Sn(II) and Fe(II)]. *Inorg. Chim. Acta*, **2005**, 358, 1595–1604.
- (751) Antolini, F.; Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. Crystalline Na-Si(NN) Derivatives $[\text{Si}(\text{NN}) = \text{Si}\{(\text{NCH}_2^t\text{Bu})_2\text{C}_6\text{H}_4\text{-1,2}\}]$: the Silylenoid $[\text{Si}(\text{NN})\text{OMe}]^-$, the Dianion $[(\text{NN})\text{Si-Si}(\text{NN})]^{2-}$, and the Radical Anion $c\text{-}[\text{Si}(\text{NN})]_3^-$. *Chem. Commun.* **2005**, 5112–5114.
- (752) Hitchcock, P. B.; Lappert, M. F.; Protchenko, A. V. New Reactions of β -Diketiminatolanthanoid Complexes: Sterically Induced Self-deprotonation of β -Diketiminato Ligands. *Chem. Commun.* **2005**, 951–953.
- (753) Lappert, M. F.; Hitchcock, P. B.; Khvostov, A. V.; Li, Z. N.; Protchenko, A. V. Non-Classical Organic Cerium(IV) Compounds: Amides, Oxides, Peroxides. *Abstr. Pap. Am. Chem. Soc.* **2005**, 229 (1), U1015.
- (754) Gehrhus, B.; Hitchcock, P. B.; Lappert, M. F. Synthesis of a Stable Biphenyl-bis(carbene) and -Bis(silylene) $[\text{M}\{(\text{NCH}_2\text{Bu}^t)_2\text{C}_6\text{H}_3\text{-3,4}\}]_2$ (M = C or Si). *Z anorg. allg. Chem.* **2005**, 631, 1383–1386.

- (755) Lappert, M. F. Contributions to the Chemistry of Carbenometal Chemistry. *J. Organomet. Chem.* **2005**, 690, 5467–5473.
- (756) Wang, Y.; Song, Y. L.; Lappert, M. F.; Xin, X. Q.; Usman, A.; Fun, H. K.; Zheng, H. G. Effect of Substituent dtp to Optical Properties of Heterobimetallic M/Ag/S Nest-shaped Clusters (M = Mo, W). *Inorg. Chim. Acta* **2005**, 2217–2223.
- (757) Hitchcock, P. B.; Huang, Q. G.; Lappert, M. F.; Zhou, M. S. The Coordination Chemistry of the C_1 -Symmetric Bis(silyl)methyl Ligand $[CH(SiMe_3)\{SiMe(OMe)_2\}]^-$ Revisited: Li/M- (M = Zn, Tl, Ce), Li_4 or Ce_2 Methoxy-bridged Alkyls. *Dalton Trans.* **2005**, 2988–2993.
- (758) Lappert, M. F.; Hitchcock, P. B.; Khvostov, A. V.; Merle, P. G.; Protchenko, A. V.; Sablong, R. Researches on 1,3-Diazaallylmetal Complexes: New Structural Motifs. *Abstr. Pap. Am. Chem. Soc.* **2005**, 229 (1), U962.
- (759) Farwell, J. D.; Hitchcock, P. B.; Lappert, M. F.; Protchenko, A. V. Synthesis and Structures of a 3-Sila- β -diketiminatomagnesium Bromide, Ketenimide and Triflate. *Chem. Commun.* **2005**, 2271–2273.
- (760) Hitchcock, P. B.; Lappert, M. F.; Wang, Z.-X. Bis(silylaminodiarylphosphoranylsilylmethyl-*C,N*)-tin(II) and -lead(II) Complexes and their Precursors; Structures of $H(LL'')$, $H(LL''')$, $Sn(LL''')_2$ and $Pb(LL''')_2$; $[LL'']^- = [CH(SiMe_3)P(Ph)_2=NSiMe_3]^-$, $[LL''']^- = [CH(SiMe_3)P(Ph)=NSi(Me_2)(C_6H_4-1,2)]^-$. *J. Organomet. Chem.* **2006**, 691, 2748–2756.
- (761) Ibrahim, S. K.; Khvostov, A. V.; Lappert, M. F.; Maron, L.; Perrin, L.; Pickett, C. J.; Protchenko, A. V. An Electrochemical and DFT Study on Selected β -Diketiminato Metal Complexes. *Dalton Trans.* **2006**, 2591–2596.
- (762) Bourget-Merle, L.; Cheng, Y. X.; Doyle, D. J.; Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F.; Protchenko, A. V.; Wei, X. H. β -Diketiminates of Some Main Group Elements: New Structural Motifs. In *Modern Aspects of Main Group Chemistry*; Lattman, M and Kemp, RA, Eds.; ACS Symposium Series **2005** 917, pp 192–207.
- (763) Brynda, M.; Herber, R.; Hitchcock, P. B.; Lappert, M. F.; Nowik, I.; Power, P. R.; Protchenko, A. V.; Ruzicka, A.; Steiner, J. Higher-nuclearity Group 14 Metalloid Clusters: $[Sn_9\{Sn(NRR'')_6\}]$. *Angew. Chem. Int. Ed.* **2006**, 45, 4333–4337.
- (764) Davies, M. J.; Lappert, M. F. Studies on 1,2-Phenylenedioxoborylcyclopentadienes and some of their Metal (Ti, Zr, Fe) Complexes. *Polyhedron* **2006**, 25, 397–405.
- (765) Hitchcock, P. B.; Lappert, M. F.; Wei, X. H. Synthesis and Structures of Some Bimetallic (Li/Ca, Li/Zn, Li/Li) Diamides derived from 1,2-Bis(neopentylamino)benzene and of $Li_2[\{N(SiMe_2NPr^i)_2\}_2C_6H_4-1,2](thf)_3$. *Dalton Trans.* **2006**, 1181–1187.
- (766) Hitchcock, P. B.; Hulkes, A. G.; Lappert, M. F.; Protchenko, A. V. Diversity of Triflate Coordination Modes in Neodymocene Complexes Containing Bulky Bis(trimethylsilyl)cyclopentadienyl Ligands. *Inorg. Chim. Acta* **2006**, 359, 2998–3006.

- (767) Antolini, F.; Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F. Synthesis and Characterization of *N*-Silylated, C_1 -Symmetric Benzamidates of Lithium, Sodium, and tin(II). *Can. J. Chem.* **2006**, *84*, 269–276.
- (768) Hitchcock, P. B.; Lappert, M. F.; Protchenko, A. V. Facile Formation of a Homoleptic Ce(IV) Amide via Aerobic Oxidation. *Chem. Commun.* **2006**, 3546–3548.
- (769) Hitchcock, P. B.; Lappert, M. F.; Sablong, R. Reactions of $M[CH(SiMe_3)_2]$ ($M = Na$ or K) with PhCN, and Related Chemistry. *Dalton Trans.* **2006**, 4146–4154.
- (770) Hitchcock, P. B.; Huang, Q. G.; Lappert, M. F.; Wei, X. H.; Zhou, M. S. Synthesis and Structures of Some Heterometallic $[(Li, Y)_2, (M_3, Ce)$ ($M = Li$ or Na), (Li, Zr_2) and $(Li, Zr)_4]$ Oligomeric Diamides derived from 1,2-Bis(neopentylamino)benzene. *Dalton Trans.* **2006**, 2991–2997.
- (771) Cheng, Y.; Doyle, D. J.; Hitchcock, P. B.; Lappert, M. F. The β -Dialdiminato Ligand $[\{N(C_6H_3Pr^{i-2,6})C(H)\}_2CPh]^-$: the Conjugate Acid and Li, Al, Ga and In Derivatives. *Dalton Trans.* **2006**, 4449–4460.
- (771a) Avent, A.G., Antonili, F. Hitchcock, P.B., Khvostov, A.V., Lappert M. F., Protchenko A.V. Reactions between a sodium amide $Na[N(SiMe_3)R^1]$ ($R^1 = SiMe_3, SiMe_2Ph$ or Bu^t) and a cyanoalkane RCN ($R = Ad$ or Bu^t) *Dalton Trans.* **2006**, 919-927.
- (772) Farwell, J. D.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Characterisation of $[AlMe_n\{Si(SiMe_3)_3\}_{3-n}(thf)]$ ($n = 1$ or 2). *J. Organomet. Chem.* **2007**, *692*, 5492–5494.
- (773) Farwell, J. D.; Hitchcock, P. B.; Lappert, M. F.; Protchenko, A. V. Synthesis and Structures of 3-Sila- β -Diketiminato Complexes of the Coinage Metals. *J. Organomet. Chem.* **2007**, *692*, 4953–4961.
- (774) Clendenning, S. B.; Hitchcock, P. B.; Lappert, M. F.; Merle, P. G.; Nixon, J. F.; Nyulaszi, L. Synthesis of the 2,4,5-Tri-*tert*-butyl-1,3-diphospholide Anion by Phosphinidene Elimination from 2,4,6-Tri-*tert*-butyl-1,3,5-Triphosphabenzene on Treatment with the Amide $Li[NPh(SiMe_3)]$. *Chem. Eur. J.* **2007**, *13*, 7121–7128.
- (775) Hitchcock, P. B.; Lappert, M. F.; Merle, P. G. Synthesis and Structures of Selected Benzamidates of Li, Na, Al, Zr and Sn(II) using the C_1 -Symmetric Ligands $[N(SiMe_3)C(C_6H_4Me-4$ or $Ph)NPh]^-$. *Dalton Trans.* **2007**, 585–594.
- (776) Hitchcock, P. B.; Lappert, M. F.; Li, G.; Protchenko, A. V. β -Diiminato Ligand (L) Transformations in Reactions of KL with PI_3 and I_2 [$L = \{N(C_6H_3Pr^{i-2,6})C(H)\}_2CPh$]. *Chem. Commun.* **2007**, 846–848.
- (777) Chen, M.; Fulton, J. R.; Hitchcock, P. B.; Johnstone, N. C.; Lappert, M. F.; Protchenko, A. V. Synthesis and Theoretical Studies on Rare Three-Coordinate Lead Complexes. *Dalton Trans.* **2007**, 2770–2778.
- (778) Wei, X.-H.; Dong, Q.; Tong, H.; Chao, J.; Liu, D.; Lappert M. F. Heterotrimetallic Salts: Synthesis, Structures, and Super-base Reactivity of Crystalline *tert*-Butoxides $[Li_4Na_2K_2(OBu^t)_8(\mu-L)]_n$. *Angew. Chem, Int. Ed.* **2008**, *47*, 3976–3978.

- (779) Farwell, J. D.; Hitchcock, P. B.; Lappert, M. F.; Luinstra, G. A.; Protchenko, A. V.; Wei, X.-H. Synthesis and Structures of some Sterically Hindered Zinc Complexes containing 6-Membered ZnNCCCN and ZnOCCCN Rings. *J. Organomet. Chem.* **2008**, *693*, 1861–1869.
- (780) Bourget-Merle, L.; Hitchcock, P. B.; Lappert, M. F.; Merle, P. G. Synthesis and Structures of Crystalline Li, Al and Sn(II) 1-Azaallyls and β -Diketiminates derived from $[\text{Li}\{\mu, \eta^3\text{-N}(\text{SiMe}_3)\text{C}(\text{Ad})\text{C}(\text{H})\text{SiMe}_3\}]_2$ (Ad = 1-Adamantyl). *Dalton Trans.* **2008**, 3493–3501.
- (781) Al-Ktaifani, M. M.; Hitchcock, P. B.; Lappert, M. F.; Nixon, J. F.; Uiterweerd, P. Specific Insertion Reactions of a Germylene, Stannylene and Plumbylene into the Unique P-P Bond of the Hexaphosphapentaprismane Cage, $\text{P}_6\text{C}_4^t\text{Bu}_4$. Crystal and Molecular Structures of $\text{P}_6\text{C}_4^t\text{Bu}_4\text{ER}_2$ (E = Ge, Sn, R = $\text{N}(\text{SiMe}_3)_2$; E = Pb, R = $\text{C}_6\text{H}_3(\text{NMe}_3)_2$ -2,6 *Dalton Trans.* **2008**, 2825–2831.
- (782) Wei, X.-H.; Farwell, J. D.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Structures of Some New Types of Lithium β -Diketiminates. *Dalton Trans.* **2008**, 1073–1080.
- (783) Wei, X.-H.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Structures of the 2-(Dimethylsilyl)pyrimidine Derivatives $[\text{Si}(\text{Me})_2\text{NC}(\text{Ar})\text{C}(\text{H})\text{C}(\text{Ar})\text{NX}]_n$ (Ar = Ph, $\text{C}_6\text{H}_4\text{Bu}^t$ -4; X = H, SiMe_3 , $\text{Li}(\text{hmpa})_2$, $\text{K}(\text{thf})_3$; n = 1, 2). *J. Organomet. Chem.* **2008**, *693*, 3256–3262.
- (784) Hitchcock, P. B.; Lappert, M. F.; Maron, L.; Protchenko, A. V. Lanthanum does form Stable Molecular Compounds in the +2 Oxidation State. *Angew. Chem. Int. Ed.* **2008**, *47*, 1488–1491.
- (785) Wei, X.; Cheng, Y.; Hitchcock, P. B.; Lappert, M. F. Syntheses, Structures and Reactions of a Series of β -Diketiminatoyttrium Compounds. *Dalton Trans.* **2008**, 5235–5246.
- (786) Hitchcock, P. B.; Lappert, M. F.; Wang, Z.-X. Synthesis and Characterisation of Six Fe(II or III), Co(II) or Zr(IV) Complexes containing the Ligand $[\text{CH}(\text{SiMe}_2\text{R})\text{PPh}_2\text{NSiMe}_3]^-$ (R = Me, NEt_2) and of $[\text{Co}\{\text{N}(\text{SiMe}_3)\text{C}(\text{Ph})\text{C}(\text{H})\text{PPh}_2\text{NSiMe}_3\}_2]$. *J. Organomet. Chem.* **2008**, *693*, 3767–3770.
- (787) Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F.; Protchenko, A. V. Lanthanide(II) Complexes of the Dihydrotriazinido Ligand $[\text{N}\{\text{C}(\text{Ph})=\text{N}\}_2\text{C}^t(\text{Bu})\text{Ph}]^-$. *Z. anorg. allg. Chem.* **2008**, *634*, 1373–1377.
- (788) Lappert, M.; Power, P.; Protchenko, A.; Seeber, A. *Metal Amide Chemistry*; Wiley: Chichester, **2009**, 335 pp.
- (789) Hitchcock, P. B.; Lappert, M. F.; Wang, Z.-X. A Contribution to 1-Azapentadienylmetal Chemistry: Si, Sn(II), Fe(II) and Co(II) Complexes. *J. Organomet. Chem.* **2009**, *694*, 3762–3767.

- (790) Hitchcock, P. B.; Lappert, M. F.; Li, G.; Coles, M. P. Synthesis and Structures of β -dialdiminatoantimony(III) Halides and β -Dialdiminium Hexahalogenoantimonates. *Dalton Trans.* **2009**, 7820–7826.
- (791) Lappert, M. F.; Alvarez, S.; Aullon, G.; Fandos, R.; Otero, A.; Rodriguez, A.; Rojas, S.; Terreros, P. Reactivity of a Super-electron-rich Olefin Derived from Cyclam. *Eur. J. Inorg. Chem.* **2009**, 1851–1860.
- (792) Hitchcock, P. B.; Lappert, M. F.; Pierssens, L. J.-M.; Protchenko, A. V.; Uiterweerd, P. G. H. Synthesis and Characterisation of twelve Sn^{IV} Diaryls and Formation of a Sn^{III} Triaryl. *Dalton Trans.* **2009**, 4578–4585.
- (793) Doyle, D. J.; Hitchcock, P. B.; Lappert, M. F.; Li, G. New Group 14 Element(IV) β -Diiminates and a $\text{Sn}(\text{II})$ Analogue. *J. Organomet. Chem.* **2009**, 694, 2611–2617.
- (794) Hitchcock, P. B.; Lappert, M. F.; Protchenko, A. V.; Uiterweerd, P. G. H. Synthesis and Structures of Halides and Pseudohalides of bis[2,6-bis(dimethylamino)phenyl]tin(IV). *Dalton Trans.* **2009**, 353–361.
- (795) Hitchcock, P. B.; Lappert, M. F.; Li, G. Complexes Containing the $[\text{TeCl}_4\text{X}]^-$ Moiety ($\text{X} = \text{Cl}$ or an Aryl Group). *Inorg. Chim. Acta* **2009**, 362, 3982–3986.
- (796) Cheng, Y.; Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F. β -Diiminatolanthanoid(III) Halides Revisited. *Inorg. Chim. Acta* **2009**, 362, 4678–4684.
- (797) Hitchcock, P. B.; Lappert, M. F.; Li, G.; Protchenko, A. V. β -Diiminato Complexes of Arsenic Including the Formally As^{I} Compound $[\text{As}_3\text{L}_3]$ [$\text{L} = \{\text{N}(\text{C}_6\text{H}_3\text{Pr}^1\text{-}2\text{-}6)\text{C}(\text{H})\}_2\text{CPh}$]. *Chem. Commun.* **2009**, 428–429.
- (798) Hitchcock, P. B.; Lappert, M. F.; Linnolahti, M.; Sablong, R.; Severn, J. R. Synthesis and Structures of the Transition metal(II) β -Diketiminates $[\text{ML}_2]$ ($\text{M} = \text{Mn}, \text{Fe}, \text{Ni}, \text{Cu}, \text{Pd}$), $[\text{ML}_2^-]$ ($\text{M} = \text{Ni}, \text{Cu}$) and $[\text{M}(\eta^3\text{-C}_3\text{H}_5)\text{L}]$ ($\text{M} = \text{Ni}, \text{Pd}$); L or $\text{L}^- = [\{\text{N}(\text{SiMe}_3 \text{ or } \text{H})\text{C}(\text{Ph})\}_2\text{CH}]$. *J. Organomet. Chem.* **2009**, 694, 667–676.
- (799) Hitchcock, P. B.; Lappert, M. F.; Linnolahti, M.; Severn, J. R.; Uiterweerd, P. G. H.; Wang, Z.-X. Synthesis and Structures of the Dinuclear tin(II) Complexes $[\text{Sn}\{\mu\text{-C}(\text{R})\text{X}(\text{Z})\text{NSiMe}_3\}_2]$ [$\text{R} = \text{Ph}, \text{X}(\text{Z}) = \text{CPh}; \text{R} = \text{SiMe}_3, \text{X}(\text{Z}) = \text{PPh}_2$] and of Related Compounds. *J. Organomet. Chem.* **2009**, 694, 3487–3499.
- (800) Boesveld, W. M.; Hitchcock, P. B.; Lappert, M. F. Varied Reactions of $[\text{M}(\text{L})]_3$ with $\text{HgCl}_2, \text{FeBr}_2, \text{CeCl}_3, \text{AgOTf}$; Ligand Transfer, Nucleophilic Attack with Recombination and/or Fragmentation [$\text{M} = \text{Li}$ or Na ; $\text{L} = \text{N}(\text{SiMe}_3)\{\text{C}(\text{H})\text{N}\}_3\text{SiMe}_3$]. *Inorg. Chem.* **2009**, 48, 11444–11450.
- (801) Hitchcock, P. B.; Khvostov, A. V.; Lappert, M. F.; Protchenko, A. V. Heteroleptic Ytterbium(II) Complexes supported by a Bulky β -Diketiminato Ligand. *Dalton Trans.* **2009**, 2383–2391.

- (802) Hitchcock, P. B.; Lappert, M. F.; Li, G. Synthesis and Characterisation of Three Dinuclear β -dialdiminatobismuth(III) Dihalides. *Inorg. Chim. Acta* **2010**, *363*, 1230–1235.
- (803) Rosado, P. J.; Buchanan, W. D.; Brooks, A. J.; Frankland, A. D.; Lappert, M. F.; Ruhlandt-Senge, K. Alkaline Earth Tosylates as Inexpensive Salt Metathesis Source Compounds. *Abstr. Pap. Am. Chem. Soc.* **2010**, 239.
- (804) Coles, M. P.; Hitchcock, P. B.; Khvostov, A. V; Lappert, M. F.; Li, Z.; Protchenko, A. V. Crystalline Amidocerium(IV) Oxides and a Side-on Bridging Dioxygen Complex. *Dalton Trans.* **2010**, *39*, 6780–6788.
- (805) Hitchcock, P. B.; Lappert, M. F.; Li, G. Synthesis and Structures of Lithium Salts of Two Cluster Iodoarsenate(III)s and a Periodohexaantimonate(III). *Inorg. Chim. Acta* **2010**, *363*, 179–183.
- (806) Coles, M. P.; Hitchcock, P. B.; Khvostov, A. V; Lappert, M. F.; Protchenko, A. V. Crystalline Di- or Trianionic Metal (Al, Sm) β -Diketiminates. *Dalton Trans.* **2010**, *39*, 6426–6433.
- (807) Hitchcock, P. B.; Lappert, M. F.; Protchenko, A. V. Synthesis and Structure of the Silylated Benzene Radical Anion Salts [K([18]crown-6){C₆H₄(SiMe₃)_{2-1,4}}] and [K([18]crown-6)(THF)₂][C₆H₂(SiMe₃)_{4-1,2,4,5}]. *J. Organomet. Chem.* **2011**, *696*, 2161–2164.
- (808) Coles, M. P.; Hitchcock, P. B.; Khvostov, A. V; Lappert, M. F.; Maron, L. Synthesis and Structures of the [Benzamidinato]³⁻ Complexes Li₃(tmeda)(L')₂ and [Li(thf)₄][Li₅(L'')(OEt₂)₂] [L' = N(SiMe₃)C(Ph)N(SiMe₃) and L'' = N(SiMe₃)C(C₆H₄Me-4)NPh]. *Dalton Trans.* **2011**, *40*, 3047–3052.
- (809) Wei, X.-H.; Coles, M. P.; Hitchcock, P. B.; Lappert, M. F. Synthesis and Structures of Five Crystalline Organometallic (Li/Y, Mg/Mg) or Coordination (Mg, Cr^{II}, Y/Y) Complexes. *Z. anorg. allg. Chem.* **2011**, *637*, 1807–1813.
- (810) Shi, J.; Guo, Z.; Wei, X.; Liu, D.; Lappert, M. F. Lithium Dibenzylamide, a Simple, Selective and Highly Efficient Catalyst for Isocyanate Cyclotrimerization to Isocyanurate. *Synlett* **2011**, 1937–1939.
- (811) Caro, C. F.; Coles, M. P.; Hitchcock, P. B.; Lappert, M. F.; Pierssens, L. J.-M. Crystalline Metal (Li, Mg, Ca, Sr, Ba, Sn, Pb) Complexes of the New Chelating *N,N*'-Dianionic [1,2-N(R)C₆H₄(CH₂NR)]²⁻ Ligand (R = SiMe₃, CH₂Bu^t). *Dalton Trans.* **2011**, *40*, 9821–9830.
- (812) Coles, M. P.; Hitchcock, P. B.; Lappert, M. F.; Protchenko, A. V. Syntheses and Structures of the Crystalline, Highly Crowded 1,3-Bis(trimethylsilyl)cyclopentadienyls [MCp^{''}₃] (M = Y, Er, Yb), [PbCp^{''}₂], [{YCp^{''}₂(μ -OH)}₂], [(ScCp^{''}₂)₂(μ - η^2 : η^2 -C₂H₄)], [YbCp^{''}₂Cl(μ -Cl)K(18-crown-6)] and [KCp^{''}] _{∞} . *Organometallics* **2012**, *31*, 2682–2690.

(813) Li, J.; Shi, J.; Han, H.; Guo, Z.; Tong, H.; Wei, X.; Liu, D.; Lappert, M. F. Synthesis, Structures, and Reactivities of Guanidinatozinc Complexes and Their Catalytic Behavior in the Tishchenko Reaction. *Organometallics* **2013**, *32*, 3721–3727.

(814) Lappert M.F. Wei, X.H. Studies on Metal and Metalloid Trimethylsilylmethyls $M[CH(SiMe_3)X]X'_{n-1}$ e.g. $Sn[CH(SiMe_3)_2]_2$ *J Organomet. Chem.* **2013** 700 reference incomplete.