

PUBLICATIONS

1. Iron Enneacarbonyl. M. H. Chisholm, A. G. Massey and N. R. Thompson, *Nature* 211, 67 (1966).
2. Low Coordination Numbers for Chromium in Chromium(III) Compounds. E. C. Alyea, J. S. Basi, D. C. Bradley and M. H. Chisholm, *Chem. Comm.*, 495 (1968).
3. Tungsten Hexadimethylamide. D. C. Bradley, M. H. Chisholm, C. E. Heath and M. B. Hursthouse, *Chem. Comm.*, 1261 (1969).
4. Cationic Acetylene, Acetylide and Carbene Complexes of Platinum(II). M. H. Chisholm and H. C. Clark, *Chem. Comm.*, 763 (1970).
5. Reactions of Platinum(II)-Stabilized Carbonium Ions. M. H. Chisholm, H. C. Clark and D. H. Hunter, *Chem. Comm.*, 809-810 (1971).
6. Covalent Compounds of Quadrivalent Transition Metals. Part II. Chromium(IV) Tertiary Alkoxides and Triethylsilyloxy. E. C. Alyea, J. S. Basi, D. C. Bradley and M. H. Chisholm, *J. Chem. Soc., Section A*, 772-776 (1971).
7. Covalent Compounds of Quadrivalent Transition Metals. Part III. Chromium(IV) Dialkylamides. J. S. Basi, D. C. Bradley and M. H. Chisholm, *J. Chem. Soc., Section A*, 1433-1436 (1971).
8. Covalent Compounds of Quadrivalent Transition Metals. Part IV. Niobium(IV) Dialkylamides. D. C. Bradley and M. H. Chisholm, *J. Chem. Soc., Section A*, 1511-1514 (1971).
9. Covalent Compounds of Quadrivalent Transition Metals. Part V. Molybdenum(IV) Dialkylamides. D. C. Bradley and M. H. Chisholm, *J. Chem. Soc., Section A*, 2741-2744 (1971).
10. Cationic Acetylenic Platinum(II) Compounds and Their Derivatives. Part I. Alkoxy-carbene Complexes. M. H. Chisholm and H. C. Clark, *Inorg. Chem.* 10, 1711-1716 (1971).
11. Cationic Acetylenic Platinum(II) Compounds and Their Derivatives. Part II. Acetylene and Vinyl Ether Complexes. M. H. Chisholm and H. C. Clark, *Inorg. Chem.* 10, 2557-2563 (1971).
12. Novel Cyclobutadiene-Platinum(II) and Alkoxy-carbene Platinum(IV) Cations. M. H. Chisholm and H. C. Clark, *Chem. Comm.*, 1484-1485 (1971).
13. The Relationships between ¹³C NMR Parameters, trans-Influences and Ligand Reactivities for Methylplatinum Compounds. M. H. Chisholm, H. C. Clark, L. E. Manzer and J. B. Stothers, *Chem. Comm.*, 1627-1629 (1971).
14. Cationic Acetylenic Platinum(II) Compounds and Their Derivatives. Part III. Reactions of Platinum(II) Stabilized Carbonium Ions. M. H. Chisholm and H. C. Clark, *J. Am. Chem. Soc.* 94, 1532-1539 (1972).
15. Cationic Acetylenic Platinum(II) Compounds and Their Derivatives. Part IV. Displacement Reactions. M. H. Chisholm, H. C. Clark and L. E. Manzer, *Inorg. Chem.* 11, 1269-1275 (1972).
16. Trifluoromethylplatinum Complexes and the Nature of the Pt-CF₃ Bond. T. G. Appleton, M. H. Chisholm, H. C. Clark and L. E. Manzer, *Inorg. Chem.* 11, 1786-1794 (1972).
17. A Comparison of the Bonding in Zero- and Divalent Platinum-Olefin and -Acetylene Complexes from ¹³C NMR Parameters. M. H. Chisholm, H. C. Clark, L. E. Manzer and J. B. Stothers, *J. Am. Chem. Soc.* 94, 5087-5089 (1972).
18. Mechanism of the Insertion of an Acetylene into a Methylplatinum(II) Bond. T. G. Appleton, M. H. Chisholm and H. C. Clark, *J. Am. Chem. Soc.* 94, 8912-8914 (1972).
19. Cationic Acetylenic Platinum(II) Compounds and Their Derivatives. Part V. A Comparative Study with (-Olefinic Complexes. M. H. Chisholm and H. C. Clark, *Inorg. Chem.* 12, 991-998 (1973).
20. Some Aspects of Organoplatinum Chemistry. Significance of Metal-Induced Carbonium Ions. M. H. Chisholm and H. C. Clark, *Acc. Chem. Res.* 6, 202-209 (1973).
21. Carbon-13 NMR Studies of Organometallic Compounds. I. trans-Methylplatinum(II) Derivatives. M. H. Chisholm, H. C. Clark, L. E. Manzer, J. B. Stothers and J. E. H. Ward, *J. Am. Chem. Soc.* 95, 8574-8583 (1973).
22. Spectroscopic Properties of a Series of Vinyl-Platinum Complexes. T. G. Appleton, M. H. Chisholm, H. C. Clark and L. E. Manzer, *Can. J. Chem.* 51, 2243-2250 (1973).

23. Reactions of Propynylplatinum(II) Compounds. M. H. Chisholm and D. A. Couch, *J. C. S. Chem. Commun.*, 42-43 (1974).
24. Hexakis(dimethylamino)- and Hexakis(tert-butoxy)dimolybdenum(III). M. H. Chisholm and W. Reichert, *J. Am. Chem. Soc.* **96**, 1249-1251 (1974).
25. X-Ray Structure of Hexakis(dimethylamino)dimolybdenum. A New Compound with a Metal-to-Metal Triple Bond. M. H. Chisholm, F. A. Cotton, B. A. Frenz, W. Reichert and L. W. Shive, *J. C. S. Chem. Commun.*, 480-481 (1974).
26. Tris(dimethylamino)tris(N,N-dimethylcarbamato)tungsten(VI). The Product of the Remarkable Reaction between Hexakis(dimethylamino)tungsten and Carbon Dioxide. M. H. Chisholm and M. Extine, *J. Am. Chem. Soc.* **96**, 6214-6216 (1974).
27. Alcoholysis Reactions of Chloroplatinum(II) Chlorovinyl Compounds. R. A. Bell and M. H. Chisholm, *J. C. S. Chem. Commun.*, 818-819 (1974).
28. Reactions of Dimethyl Acetylenedicarboxylate and Related Acetylenes with Methylplatinum(II) Complexes. T. G. Appleton, M. H. Chisholm, H. C. Clark and K. Yasufuku, *J. Am. Chem. Soc.* **96**, 6600-6605 (1974).
29. Some Aspects of the Organic Chemistry Surrounding Platinum. M. H. Chisholm, *Transactions of the New York Academy of Sciences*, Series II, Vol. 36, 675-688 (1974).
30. Hexakis(dimethylamido)ditungsten. The First Structurally Characterized Molecule with an Unbridged Triple Bond between Tungsten Atoms. M. H. Chisholm, F. A. Cotton, M. Extine, B. R. Stults and J. M. Troup, *J. Am. Chem. Soc.*, **97**, 1242-1243 (1975).
31. Reactions of Transition Metal-Nitrogen σ -Bonds. II. Pentakis(N,N-dimethylcarbamato)-niobium(V) and Its Facile Exchange Reaction with Carbon Dioxide. M. H. Chisholm and M. Extine, *J. Am. Chem. Soc.* **97**, 1623-1625 (1975).
32. Carbon-13 Nuclear Magnetic Resonance Studies of Organometallic Compounds. VII. 1,5-Cyclooctadienylplatinum(II) Derivatives. M. H. Chisholm, H. C. Clark, L. E. Manzer, J. B. Stothers and J. E. H. Ward, *J. Am. Chem. Soc.*, **97**, 721-727 (1975).
33. Carbon-13 Nuclear Magnetic Resonance Studies of Organometallic Compounds. VIII. Platinum(II) Carbene Derivatives. M. H. Chisholm, H. C. Clark, J. E. H. Ward and K. Yasufuku, *Inorg. Chem.*, **14**, 893-899 (1975).
34. Cationic Platinum(II) Acetylenic Complexes and Their Derivatives. VI. Aminolysis and Other Reactions of Cationic Platinum(II) Alkoxycarbene Complexes. M. H. Chisholm, H. C. Clark, W. S. Johns, J. E. H. Ward and K. Yasufuku, *Inorg. Chem.*, **14**, 900-905 (1975).
35. Role of Cationic Trans Intermediates in Promoting the Insertion of Unsaturated Hydrocarbons into Platinum-Hydrogen and Platinum-Carbon Bonds. A Study of the Insertion Reaction Involving Compounds of the Type $trans\text{-}[\text{PtMe}(\eta^2\text{-C}_3\text{H}_4)(\text{PMe}_2\text{Ph})_2]^+\text{Z}^-$. M. H. Chisholm and W. S. Johns, *Inorg. Chem.*, **14**, 1189-1194 (1975).
36. Carbon Dioxide Exchange Reactions Involving Early Transition Metal N,N-Dimethylcarbamato Compounds: Reversible Insertion of Carbon Dioxide into Transition Metal-Nitrogen σ -Bonds. M. H. Chisholm and M. Extine, *J. C. S. Chem. Commun.*, 438-439 (1975).
37. Stabilized Carbonium Ions in the Organic Chemistry of Platinum: Evidence for Their Existence. M. H. Chisholm, *Platinum Metals Review*, **19**, 100-109 (1975).
38. New Metalloorganic Compounds of Tungsten(III). M. H. Chisholm and M. Extine, *J. Am. Chem. Soc.*, **97**, 5625-5627 (1975).
39. Applications of Carbon-13 NMR in Inorganic Chemistry. M. H. Chisholm and S. Godleski, *Progr. Inorg. Chem.*, **20**, 299-436 (1976).
40. Preparation, Characterization and Reactions of Dialkylamides and Alkoxides of Molybdenum and Tungsten. M. H. Chisholm, M. W. Extine and W. W. Reichert, *Advances in Chemistry Series*, **150**, 273-288 (1976).
41. Addition of Anhydrous Hydrogen Chloride to Bis(ethynyl)bis(dimethylphenylphosphine)-platinum(II). A Novel Sequence of Platinum(II) Promoted Addition-Elimination Reactions. R. A. Bell and M. H. Chisholm, *J. C. S. Chem. Commun.*, 200-201 (1976).

42. The Molybdenum-Molybdenum Triple Bond. 1. Hexakis(dimethylamido)dimolybdenum and Some Homologues: Preparation, Structure and Properties. M. H. Chisholm, F. A. Cotton, B. A. Frenz, W. W. Reichert, L. W. Shive and B.R. Stults, *J. Am. Chem. Soc.*, 98, 4469-4476 (1976).
43. The Tungsten-Tungsten Triple Bond. 1. Preparation, Properties and Structural Characterization of Hexakis(dimethylamido)ditungsten(III) and Some Homologues. M. H. Chisholm, F. A. Cotton, M. W. Extine and B. R. Stults, *J. Am. Chem. Soc.*, 98, 4477-4485 (1976).
44. The Tungsten-Tungsten Triple Bond. 2. Preparation, Structure and Dynamical Behavior of Dichlorotetrakis(diethylamido)ditungsten. M. H. Chisholm, F. A. Cotton, M. W. Extine, M. Millar and B. R. Stults, *J. Am. Chem. Soc.*, 98, 4486-4491 (1976).
45. Transition-Metal Dialkylamides and Disilylamides. D. C. Bradley and M. H. Chisholm, *Acc. Chem. Res.*, 9, 273-280 (1976).
46. Insertion Reactions of Carbon Dioxide with Triple Bonded Ditungsten Dialkylamido Compounds. Structures and Dynamic Properties of the Resulting Carbamate Complexes. M. H. Chisholm, F. A. Cotton, M. W. Extine and B. R. Stults, *J. Am. Chem. Soc.*, 98, 4683-4684 (1976).
47. The Tungsten-Tungsten Triple Bond. 3. Dimethyltetrakis(diethylamido)ditungsten. Structure and Dynamical Solution Behavior. M. H. Chisholm, F. A. Cotton, M. W. Extine, M. Millar and B. R. Stults, *Inorg. Chem.*, 15, 2244-2252 (1976).
48. The Tungsten-Tungsten Triple Bond. 4. Structural Characterization of Hexakis(trimethylsilylmethyl)ditungsten and Preparation of Bis- μ -(trimethylsilylmethylidyne)tetrakis(trimethylsilylmethyl)ditungsten. M. H. Chisholm, F.A. Cotton, M.W. Extine and B. R. Stults, *Inorg. Chem.*, 15, 2252-2257 (1976).
49. The Remarkable Alcoholysis Reaction and Structure of *trans*-Bis(α -chlorovinyl)bis(dimethylphenylphosphine)platinum(II). R. A. Bell, M. H. Chisholm and G. G. Christoph, *J. Am. Chem. Soc.*, 98, 6046-6048 (1976).
50. Concerning the Formation of Compounds Containing Metal-to-Metal Multiple Bonds. A Stereospecific Alkyl-for-Chlorine Exchange Reaction Involving Compounds with Tungsten-to-Tungsten Triple Bonds. M. H. Chisholm and M. W. Extine, *J. Am. Chem. Soc.*, 98, 6393-6395 (1976).
51. Hexakis(dimethylamido)tungsten(VI). D. C. Bradley, M. H. Chisholm and M. W. Extine, *Inorg. Chem.*, 16, 1791-1794 (1977).
52. The Tungsten-Tungsten Triple Bond. 5. Chlorine Atom Substitution Reactions Involving Dichlorotetrakis(diethylamido)ditungsten. Preparation, Properties, Structures and Dynamical Solution Behavior of Bis(trimethyl-silylmethyl)-, Dibromo- and Diiodotetrakis(diethylamido)ditungsten. M. H. Chisholm, F. A. Cotton, M. W. Extine, M. Millar and B.R. Stults, *Inorg. Chem.*, 16, 320-328 (1977).
53. Reactions of Transition Metal-Nitrogen σ -Bonds. 3. Early Transition Metal N,N-Dimethylcarbamates. Preparation, Properties and Carbon Dioxide Exchange Reactions. M. H. Chisholm and M. W. Extine, *J. Am. Chem. Soc.*, 99, 782-792 (1977).
54. Reactions of Transition Metal-Nitrogen σ -Bonds. 4. Mechanistic Studies of Carbon Dioxide Insertion and Carbon Dioxide Exchange Reactions Involving Early Transition Metal Dimethylamido and N,N-Dimethylcarbamato Compounds. M. H. Chisholm and M. W. Extine, *J. Am. Chem. Soc.*, 99, 792-802 (1977).
55. Reactions of Alkynyl- and Alkenylplatinum(II) Compounds. 1. Formation of Alkoxy-carbene Ligands within the Coordination Sphere of Platinum. R. A. Bell, M. H. Chisholm, D. A. Couch and L. A. Rankel, *Inorg. Chem.*, 16, 677-686 (1977).
56. Reactions of Alkynyl- and Alkenylplatinum(II) Compounds. 2. Study of the Reaction between Anhydrous Hydrogen Chloride and Diethynylbis(dimethylphenyl-phosphine)platinum(II). Evidence for Platinum Stabilized Vinyl Cations. R. A. Bell and M.H. Chisholm, *Inorg. Chem.*, 16, 687-697 (1977).

57. Reactions of Alkynyl- and Alkenylplatinum(II) Compounds. 3. Reactions of α -Chlorovinylplatinum(II) Compounds with Protic Acids. R. A. Bell and M. H. Chisholm, *Inorg. Chem.*, **16**, 698-703 (1977).
58. Reactions of Hexakis(dimethylamido)tungsten(VI). D. C. Bradley, M. H. Chisholm, M. W. Extine and M. E. Stager, *Inorg. Chem.*, **16**, 1794-1801 (1977).
59. The Tungsten-Tungsten Triple Bond. 6. Hexakis(N,N-dimethylcarbamato)ditungsten and Dimethyltetrakis(N,N-diethylcarbamato)ditungsten. Structures and Dynamical Solution Behavior. M. H. Chisholm, F. A. Cotton, M. W. Extine and B. R. Stults, *Inorg. Chem.*, **16**, 603-611 (1977).
60. Hexakis(neopentoxy)dimolybdenum. Preparation, Characterization and Reactions with Lewis Bases and Carbon Dioxide. M. H. Chisholm, W. W. Reichert, F. A. Cotton and C. A. Murillo, *J. Am. Chem. Soc.*, **99**, 1652-1654 (1977).
61. μ -Allene-bis(cyclopentadienyl)tetracarbonyldimolybdenum; A Bridging Allene Ligand. M. H. Chisholm, L. A. Rankel, W. I. Bailey, Jr., F. A. Cotton and C. A. Murillo, *J. Am. Chem. Soc.*, **99**, 1261-1262 (1977).
62. The Molybdenum-Molybdenum Triple Bond. 2. Hexakis(alkoxy)dimolybdenum Compounds: Preparation, Properties and Structural Characterization of $\text{Mo}_2(\text{OCH}_2\text{CMe}_3)_6$. M. H. Chisholm, F. A. Cotton, C. A. Murillo and W. W. Reichert, *Inorg. Chem.*, **16**, 1801-1808 (1977).
63. $(\eta^5\text{-C}_5\text{H}_5)_2\text{Cr}(\eta^2\text{-C}_4\text{F}_6)$: A π -Adduct of Chromocene. M. H. Chisholm, T. Gallagher and W. W. Reichert, *Syn. React. Inorg. Metal-Org. Chem.*, **7**, 279-289 (1977).
64. Reactions of Alkynylplatinum(II) Compounds with Aprotic Substrates. M. H. Chisholm and L. A. Rankel, *Inorg. Chem.*, **16**, 2177-2182 (1977).
65. The Tungsten-Tungsten Triple Bond. 7. Replacement of Dimethylamido by Chloro Groups in Hexakis(dimethylamido)ditungsten and -dimolybdenum Compounds. Preparation, Properties and Structure of Dichlorotetrakis(dimethylamido)ditungsten and -dimolybdenum. M. Akiyama, M. H. Chisholm, F. A. Cotton, M. W. Extine and C. A. Murillo, *Inorg. Chem.*, **16**, 2407-2411 (1977).
66. Some Aspects of the Organic Chemistry of Platinum. M. H. Chisholm and H. C. Clark in *Collected Accounts of Transition Metal Chemistry*, Vol. 2, p. 147, F. Basolo, J. Halpern and J. F. Bunnett, Eds., American Chemical Society Publication (1977).
67. Reactions of Metal-Metal Multiple Bonds. 1. μ -Allene-bis(cyclopentadienyl)-tetracarbonyldimolybdenum and -ditungsten Compounds. Preparation, Properties and Structural Characterization. W. I. Bailey, M. H. Chisholm, F. A. Cotton, C. A. Murillo and L. A. Rankel, *J. Am. Chem. Soc.*, **100**, 802-807 (1978).
68. Reactions of Metal-to-Metal Multiple Bonds. 2. Reactions of Bis(cyclopentadienyl)tetracarbonyldimolybdenum with Small Unsaturated Molecules. Structural Characterization of μ -Dimethylaminocyanimide-bis(cyclopentadienyl)tetracarbonyl-dimolybdenum. M. H. Chisholm, F. A. Cotton, M. W. Extine and L. A. Rankel, *J. Am. Chem. Soc.*, **100**, 807-811 (1978).
69. Concerning the Relative Stabilities of Ferrocenyl and Platinum(II) Stabilized Carbonium Ions: Alcoholic Protonation of *trans*-PtCl(ethynylferrocene)(PMe₂Ph)₂. M. H. Chisholm and R. K. Potkul, *Syn. React. Inorg. Metal-Org. Chem.*, **8**, 65-73 (1978).
70. The Molybdenum-Molybdenum Triple Bond. 3. A Triple Bond Between Two Four-Coordinated Molybdenum(III) Atoms. The Structural Characterization of the Bis(dimethylamine) Adduct of Dimolybdenum Hexatrimethylsiloxide. M. H. Chisholm, F. A. Cotton, M. W. Extine and W. W. Reichert, *J. Am. Chem. Soc.*, **100**, 153-157 (1978).
71. Detailed Electronic Description of Triple Bonds Between Transition Metal Atoms and Verification by Photoelectron Spectroscopy. F. A. Cotton, G. G. Stanley, B. Kalbacher, J.C. Green, E. Seddon and M. H. Chisholm, *Proc. Natl. Acad. Sci., USA*, **74**, 3109-3113 (1977).
72. Tetrakis(alkoxy) and Tetrakis(trialkylsiloxy) Compounds of Molybdenum(IV). M. H. Chisholm, W. W. Reichert and P. Thornton, *J. Am. Chem. Soc.*, **100**, 2744-2748 (1978).

73. Bis(dimethylamido)tetrakis(N,N-dimethylcarbamato)dimolybdenum. M. H. Chisholm and W. W. Reichert, *Inorg. Chem.*, 17, 767-769 (1978).
74. The Molybdenum-Molybdenum Triple Bond. 4. Insertion Reactions of Hexakis(alkoxy)-dimolybdenum Compounds with Carbon Dioxide and Single Crystal X-Ray Structural Characterization of $\text{Mo}_2(\text{O}_2\text{COBu}^t)_2(\text{OBu}^t)_4$. M. H. Chisholm, F. A. Cotton, M. W. Extine and W. W. Reichert, *J. Am. Chem. Soc.*, 100, 1727-1734 (1978).
75. Reactions of Metal-to-Metal Multiple Bonds. 3. Addition of Nitric Oxide to Hexakis(alkoxy)dimolybdenum Compounds. Preparation and Properties of Bis(nitrosyl)hexakis(alkoxy)dimolybdenum Compounds and Structural Characterization of the Isopropoxy Derivative. M. H. Chisholm, F. A. Cotton, M. W. Extine and R. L. Kelly, *J. Am. Chem. Soc.*, 100, 3354-3358 (1978).
76. Reactions of Metal-to-Metal Multiple Bonds. Part 4. μ -Acetylene-bis-(cyclopentadienyl)-tetracarbonyldimolybdenum Compounds. Preparations, Properties, Structural Characterizations and Dynamic Solution Behaviors. W. I. Bailey, M. H. Chisholm, F. A. Cotton and L. A. Rankel, *J. Am. Chem. Soc.*, 100, 5764-5773 (1978).
77. Detailed Structure of Bis(μ -trimethylsilylmethyldiyn)-tetrakis(trimethylsilylmethyl)-ditungsten (W-W). M. H. Chisholm, F. A. Cotton, M. W. Extine and C. A. Murillo, *Inorg. Chem.*, 17, 696-698 (1978).
78. Bis(dimethylamido)tris(N,N-dimethylcarbamato)tantalum(V). Structure and Dynamical Solution Behavior of a Compound Containing Seven-Coordinate Tantalum. M. H. Chisholm, F. A. Cotton and M. W. Extine, *Inorg. Chem.*, 17, 2000-2003 (1978).
79. In Search of Metal-Metal Metathesis in the Chemistry of Compounds Containing Metal-to-Metal Triple Bonds Between Molybdenum and Tungsten Atoms. M. H. Chisholm, M. W. Extine, R. L. Kelly, W. C. Mills, C. A. Murillo, L. A. Rankel and W. W. Reichert, *Inorg. Chem.*, 17, 1673-1675 (1978).
80. Chemistry of Compounds Containing Metal-to-Metal Triple Bonds Between Molybdenum and Tungsten. M. H. Chisholm and F. A. Cotton, *Acc. Chem. Res.*, 11, 356-362 (1978).
81. Molecular and Electronic Structure of Tetrakis(dimethylamido)molybdenum(IV). M. H. Chisholm, F. A. Cotton and M. W. Extine, *Inorg. Chem.*, 17, 1329-1332 (1978).
82. Structure and Bonding in Octaisopropoxydimolybdenum(IV). M. H. Chisholm, F. A. Cotton, M. W. Extine and W. W. Reichert, *Inorg. Chem.*, 17, 2944-2946 (1978).
83. Reactions of Triply Bonded Dimetal Compounds. Reversible Addition of Carbon Monoxide to a Hexakis(alkoxy)dimolybdenum Compound. A Molecule with a Carbonyl-Bridged Metal-Metal Double Bond. M. H. Chisholm, F. A. Cotton, M. W. Extine and R. L. Kelly, *J. Am. Chem. Soc.*, 100, 2256-2257 (1978).
84. Reaction Schemes for Dinuclear Compounds Containing Metal-Metal Triple Bonds Illustrated by Recent Findings in the Chemistry of Molybdenum and Tungsten. M. H. Chisholm, *Advances in Chemistry Series*, 173, 396-407 (1979).
85. The Molybdenum-to-Molybdenum Triple Bond. 5. Preparation and Structure of Dimethyl-tetrakis(dimethylamido)dimolybdenum. M. H. Chisholm, F. A. Cotton, M. W. Extine and C. A. Murillo, *Inorg. Chem.*, 17, 2338-2340 (1978).
86. Reactions of Metal-to-Metal Multiple Bonds. 5. Addition of Nitric Oxide to Hexa-*tert*-butoxyditungsten. Preparation, Properties and Structural Characterization of Tris-*tert*-butoxy(nitrosyl)(pyridine)tungsten. M. H. Chisholm, F. A. Cotton, M. W. Extine and R. L. Kelly, *Inorg. Chem.*, 18, 116-119 (1979).
87. Reaction of Transition-Metal-Nitrogen σ -Bonds. 5. Carbonation of tetrakis(diethylamido)chromium(IV) to Yield Binuclear Chromium(III) and -(II) Carbamato Complexes. M. H. Chisholm, F. A. Cotton, M. W. Extine and D. C. Rideout, *Inorg. Chem.*, 17, 3536-3540 (1978).

88. Dicyclopentadienyldi-*tert*-butoxydichromium. Preparation, Properties, Structure and Reactions with Small Unsaturated Molecules. M. H. Chisholm, F. A. Cotton, M. W. Extine and D. C. Rideout, *Inorg. Chem.*, **18**, 120-125 (1979).
89. New σ -Ethyl Compounds of Dimolybdenum($M\equiv M$) and Evidence for Dinuclear Reductive Elimination with a Concomitant Metal-Metal Triple to Quadruple Bond Transformation. M. H. Chisholm, D. A. Haitko and C. A. Murillo, *J. Am. Chem. Soc.*, **100**, 6262-6263 (1978).
90. Thermochemistry of Some Metal-to-Metal Triple Bonds. M. H. Chisholm, J. A. Connor, F. A. Cotton, G. Pilcher and H. A. Skinner, *J. Am. Chem. Soc.*, **100**, 7738-7739 (1978).
91. Prospects for Dinuclear Transition Metal Chemistry Illustrated by Recent Advances in the Chemistry of Dimolybdenum and Ditungsten. M. H. Chisholm, *Transition Metal Chemistry*, **3**, 321-333 (1978).
92. Tetradecaaisopropoxydihydridotetratungsten(IV). Oxidative Addition of Pr^iO-H Across a Tungsten-to-Tungsten Triple Bond. M. Akiyama, D. Little, M. H. Chisholm, D. A. Haitko, F.A. Cotton and M. W. Extine, *J. Am. Chem. Soc.*, **101**, 2504-2506 (1979).
93. The Tungsten-Tungsten Triple Bond. 8. Dinuclear Alkoxides of Tungsten(III) and Structural Characterization of Hexaisopropoxybis(pyridine)ditungsten, the First Compound with Four-Coordinated Tungsten Atoms United by a Triple Bond. M. Akiyama, M. H. Chisholm, F. A. Cotton, M. W. Extine, D. A. Haitko, D. Little and P. E. Fanwick, *Inorg. Chem.*, **18**, 2266-2270(1979).
94. Addition of Dimethylecyanamide to Hexakis(alkoxy)dimolybdenum Compounds. M. H. Chisholm and R. L. Kelly, *Inorg. Chem.*, **18**, 2321-2323 (1979).
95. Reactions of Metal-to-Metal Multiple Bonds. 6. Reversible Carbonylation of Hexakis(*tert*-butoxy)dimolybdenum ($M\equiv M$). A Carbonyl-Bridged Metal-to-Metal Double Bond, $Mo_2(OBu-t)_6(CO)$ ($M=M$). M. H. Chisholm, F. A. Cotton, M. W. Extine and R. L. Kelly, *J. Am. Chem. Soc.*, **101**, 7645-7650 (1979).
96. Intriguing Aspects of 1,2-Dialkyldimolybdenum and -ditungsten ($M\equiv M$) Chemistry. M. H. Chisholm and D. A. Haitko, *J. Am. Chem. Soc.*, **101**, 6784-6786 (1979).
97. The Tungsten-Tungsten Triple Bond. 9. Bis(1,3-diphenyltriazenido)tetrakis(dimethyl-amido)-ditungsten. M. H. Chisholm, J. C. Huffman and R. L. Kelly, *Inorg. Chem.*, **18**, 3554-3558 (1979).
98. A UV Photoelectron Spectroscopic Investigation of the Bonding in Some Tri-, Tetra- and Pentacoordinated Dialkylamido Compounds of Chromium, Molybdenum, Niobium and Tantalum. M. H. Chisholm, A. H. Cowley and M. Lattman, *J. Am. Chem. Soc.*, **102**, 46-50 (1980).
99. Metal-to-Metal Triple Bonds - To Cluster or Not to Cluster? Structural Characterization of Octakis(*tert*-butoxy)tetrakis(μ -fluoro)-tetramolybdenum and Octakis(*tert*-butoxy)-tris(μ -fluoro)(μ -dimethylamido)-tetramolybdenum. M. H. Chisholm, J. C. Huffman and R. L. Kelly, *J. Am. Chem. Soc.*, **101**, 7100-7104 (1979).
100. Remarkable Influence of Terminal Alkoxy Groups on Carbonyl Ligands as Seen in the New Compounds $Mo(OBu^t)_2(CO)_2(py)_2$ and $Mo_2(OPr^i)_8(CO)_2$. M. H. Chisholm, J. C. Huffman and R. L. Kelly, *J. Am. Chem. Soc.*, **101**, 7615-7617 (1979).
101. Synthesis of Dimethylamido Derivatives of Compounds Containing Metal-to-Metal Triple Bonds. M. H. Chisholm, D. A. Haitko and C. A. Murillo, *Inorg. Syn.*, Vol. XXI, J. P. Fackler, Jr., Ed.; John Wiley & Sons: New York, 1982; pp. 51-57.
102. Hexakis(isopropoxy)bis(nitrosyl)dichromium and Its Reaction with Nitrogen-Donor Ligands. D. C. Bradley, C. W. Newing, M. H. Chisholm, R. L. Kelly, D. A. Haitko, D. Little, F. A. , Cotton and P. E. Fanwick, *Inorg. Chem.*, **19**, 3010-3014 (1980).
103. Dynamic and Static Stereochemistry in Dimolybdenum and Ditungsten Compounds Containing a Central ($M\equiv M$)⁶⁺ Unit. M. H. Chisholm, *Chemical Society Faraday Symposium*, No. 14, 194-210 (1980).
104. Hexaisopropoxybis(dimethylamino)dinitrosyldimolybdenum. M. H. Chisholm, J. C. Huffman and R. L. Kelly, *Inorg. Chem.*, **19**, 2762-2764 (1980).

105. A New Series of Alkyldimolybdenum (M≡M) Compounds: Direct Observation of Rotation about the Triple Bond and Alkyl Ligand Transfer. M. H. Chisholm and I. P. Rothwell, *J. Am. Chem. Soc.*, 102, 5950-5952 (1980).
106. Tris(N,N'-Dimethylethylenediamido)dimolybdenum (M≡M). A Metallopropellane with a Near Eclipsed Central Mo₂N₆ Moiety. T. P. Blatchford, M. H. Chisholm, K. Folting and J. C. Huffman, *Inorg. Chem.*, 19, 3175-3176 (1980).
107. The Molybdenum-Molybdenum Triple Bond. 6. Bis(2-oxy-6-methylpyridine)tetrakis-(dimethylamido)dimolybdenum. M. H. Chisholm, K. Folting, J. C. Huffman and I. P. Rothwell, *Inorg. Chem.*, 20, 1854-1858 (1981).
108. The Molybdenum-Molybdenum Triple Bond. 7. Bis(1,3-di-*p*-tolyltriazenido)tetrakis-(dimethylamido)dimolybdenum. M. H. Chisholm, K. Folting, D. A. Haitko and J. C. Huffman, *Inorg. Chem.*, 20, 171-174 (1981).
109. The Molybdenum-Molybdenum Triple Bond. 8. Bis(6-methyl-2-pyridyl)methyltetrakis-(dimethylamido)dimolybdenum. M. H. Chisholm, K. Folting, J. C. Huffman and I. P. Rothwell, *Inorg. Chem.*, 20, 1496-1500 (1981).
110. The Tetradecaisopropoxydihydridotetratungsten Story. M. Akiyama, M. H. Chisholm, F. A. Cotton, M. W. Extine, D. A. Haitko, J. Leonelli and D. Little, *J. Am. Chem. Soc.*, 103, 779-784 (1981).
111. Formation and Stability of 1,1- and 1,2-Bis(dimethylamido)tetrakis(trimethylsilylmethyl)-dimolybdenum (M≡M). M. H. Chisholm and I. P. Rothwell, *J. C. S., Chem. Commun.*, 985-987 (1980).
112. Chlorodimethylamido Compounds of Tantalum(V): [Ta(NMe₂)₃Cl₂]₂, TaCl₃(NMe₂)₂(HNMe₂), Ta(NMe₂)₃Cl₂(HNMe₂) and [TaCl₂(NMe₂)₂(HNMe₂)₂O]. Preparations, Properties and Structures. M. H. Chisholm, J. C. Huffman and L. S. Tan, *Inorg. Chem.*, 20, 1859-1866 (1981).
113. Reactions of Metal-Metal Multiple Bonds. 7. Addition of the Halogens (Cl₂, Br₂ and I₂) and Diisopropylperoxide to Hexaisopropoxydimolybdenum (M≡M). Dinuclear Oxidative-Addition Reactions Accompanied by Metal-Metal Bond Order Changes from Three to Two to One. M. H. Chisholm, C. C. Kirkpatrick and J. C. Huffman, *Inorg. Chem.*, 20, 871-876 (1981).
114. "Reactivity of Metal-Metal Bonds", *ACS Symposium Series*, Volume 155, M. H. Chisholm, Editor, 1981.
115. Anything One Can Do, Two Can Do, Too - and It's More Interesting. M. H. Chisholm, *ACS Symposium Series*, Volume 155, 17-39 (1981).
116. The Molybdenum-Molybdenum Triple Bond. 9. Bis(1,3-di-*p*-tolyltriazenido)bis-(dimethylamido)dimethyldimolybdenum. M. H. Chisholm, D. A. Haitko, J. C. Huffman and K. Folting, *Inorg. Chem.*, 20, 2211-2215 (1981).
117. Hexadecamethoxy- and Hexadecaethoxytetratungsten: Preparation and Crystal and Molecular Structure of W₄(OEt)₁₆. M. H. Chisholm, J. C. Huffman and J. Leonelli, *J. C. S., Chem. Commun.*, 3, 270 (1981).
118. Facile Cleavage of the Mo≡Mo Bond in Reactions Between Mo₂(OBu^t)₆ and Aryl Azides and Molecular Oxygen. M. H. Chisholm, K. Folting, J. C. Huffman, C. C. Kirkpatrick and A. Ratermann, *J. Am. Chem. Soc.*, 103, 1305-1306 (1981).
119. The Molybdenum-Molybdenum Triple Bond. 10. Bis(1,3-Diphenyltriazenido) and Bis(2-oxy-6-methylpyridino)tetrakis(isopropoxy)dimolybdenum. M. H. Chisholm, K. Folting, J. C. Huffman and I. P. Rothwell, *Inorg. Chem.*, 20, 2215-2218 (1981).
120. Preparation and Characterization of 1,2-Dialkyl Compounds of Dimolybdenum and Ditungsten of Formula M₂R₂(NMe₂)₄ (M≡M). M. H. Chisholm, D. A. Haitko and J. C. Huffman, *J. Am. Chem. Soc.*, 103, 4046-4053 (1981).
121. Addition of Alkynes to Hexakisalkoxydimolybdenum (M≡M) Compounds and Structure of Hexaisopropoxydipryadino-μ-ethynedimolybdenum. M. H. Chisholm, J. C. Huffman and I. P. Rothwell, *J. Am. Chem. Soc.*, 103, 4245-4246 (1981).

122. Reactions of Metal-Metal Multiple Bonds. 8. Forming Mo-Mo Quadruple Bonds by Reductive Elimination (Alkyl Group Disproportionation) in the Reactions of 1,2-Mo₂R₂(NMe₂)₄ Compounds (M≡M) with Carbon Dioxide and 1,3-Diaryltriazenes. M. J. Chetcuti, M. H. Chisholm, K. Folting, D. A. Haitko and J. C. Huffman, *J. Am. Chem. Soc.*, **104**, 2138-2146 (1982).
123. Trimethylsilylmethylidene and Trimethylsilylmethylidyne Compounds of Molybdenum and Tungsten: (Me₃SiCH₂)₃M≡CSiMe₃ (M = Mo and W) and (Me₃SiCH₂)₃Mo=CHSiMe₃. R. A. Andersen, M. H. Chisholm, J. F. Gibson, W. W. Reichert, I. P. Rothwell and G. Wilkinson, *Inorg. Chem.*, **20**, 3934-3936 (1981).
124. Crystal and Molecular Structures of tert-Butyltetrakisdimethylamidotantalum(V). Bromo(p-tolyl)-trisdimethylamidotantalum(V) and Trimethylsilylmethyltetrakis-N,N-dimethylcarbamato-tantalum(V). Evidence for Stabilization of σ-Alkyl Ligands by Strongly π-Donating Ligands in Early Transition Metal Chemistry. M. H. Chisholm, L. S. Tan and J. C. Huffman, *J. Am. Chem. Soc.*, **104**, 4879-4884 (1982).
125. The Molybdenum-Molybdenum Triple Bond. 11. 1,1- and 1,2-Disubstituted Dimolybdenum Compounds of Formula Mo₂X₂(CH₂SiMe₃)₄ (M≡M). Observation of Rotation about the Triple Bond. M. H. Chisholm, K. Folting, J. C. Huffman and I. P. Rothwell, *Organometallics*, **1**, 251-259 (1982).
126. Metal Alkoxides - Models for Metal Oxides. 1. Preparation and Structures of Hexadeca(alkoxy)tetratungsten Compounds, W₄(OR)₁₆, where R = Me and Et, and Octakis(oxo)tetrakis(isopropoxy)tetrapyradinotetramolybdenum, Mo₄(O)₄(μ₂-O)₂(μ₃-O)₂(OPrⁱ)₂(μ₂-OPrⁱ)₂(py)₄. M. H. Chisholm, J. C. Huffman, C. C. Kirkpatrick and J. Leonelli, *J. Am. Chem. Soc.*, **103**, 6093-6099 (1981).
127. Bis(2,2'-bipyridyl)bis(isopropoxymolybdenum(II)). Structural and Spectroscopic Evidence for Molybdenum-to-Bipyridyl π*-bonding. M. H. Chisholm, J. C. Huffman, I. P. Rothwell, P. B. Bradley, N. Kress and W. H. Woodruff, *J. Am. Chem. Soc.*, **103**, 4945-4947 (1981).
128. Chemical Reactions of Metal-Metal Bonded Compounds of the Transition Elements. M. H. Chisholm and I. P. Rothwell, *Progress in Inorganic Chemistry*, **29**, 1-72 (1982).
129. Oxotrimolybdenum(IV) Alkoxides: Mo₃(μ₃-O)(μ₃-OR)(μ₂-OR)₃(OR)₆ (R = CH(CH₃)₂ and CH₂CMe₃). Synthetic Considerations. M. H. Chisholm, K. Folting, J. C. Huffman and C.C. Kirkpatrick, *J. Am. Chem. Soc.*, **103**, 5967-5968 (1981).
130. Bis(tert-butoxy)bis(arylimido)molybdenum(VI) Compounds, [Mo(OBu^t)₂(NAr)(μ-NAr)]₂, where Ar = Phenyl and p-Tolyl. M. H. Chisholm, K. Folting, J. C. Huffman and A. L. Ratermann, *Inorg. Chem.*, **21**, 978-982 (1982).
131. Bis(dimethylamino)tetra(tert-butylmercaptido)di-μ₂-sulfidodimolybdenum(IV). M. H. Chisholm, J. F. Corning and J. C. Huffman, *Inorg. Chem.*, **21**, 286-289 (1982).
132. Addition of Diphenyldiazomethane to Hexaalkoxydimolybdenum (M≡M) Compounds: Characterization of Mo₂(OPrⁱ)₆(N₂CPh₂)₂(py). M. H. Chisholm, K. Folting, J. C. Huffman and A. L. Ratermann, *J. C. S., Chem. Commun.*, 1229-1231 (1981).
133. Crystal and Molecular Structure of Mo₆O₁₀(OPrⁱ)₁₂: A Serpentine Chain of Molybdenum Atoms and Observation of Semibridging Alkoxy Ligands. M. H. Chisholm, K. Folting, J. C. Huffman and C.C. Kirkpatrick, *J. C. S., Chem. Commun.*, 189-190 (1982).
134. Metal Alkoxides - Models for Metal Oxides. 2. Addition of Ethyne, Propyne and 2-Butyne to Mo₂(OR)₆ (M≡M) Compounds (R = t-Bu, i-Pr and Np). Characterization of μ₂-Alkyne and μ₂-C₄H₄ Adducts and an Evaluation of Their Role in Alkyne Oligomerization Reactions. M. H. Chisholm, K. Folting, J. C. Huffman and I. P. Rothwell, *J. Am. Chem. Soc.*, **104**, 4389-4399 (1982).
135. Square and Butterfly 12-Electron Mo₄ Clusters Formed by Coupling Mo≡Mo Bonds. M. H. Chisholm, R. J. Errington, K. Folting and J. C. Huffman, *J. Am. Chem. Soc.*, **104**, 2025-2027 (1982).
136. Alkoxides of Molybdenum and Tungsten: Metal-Metal Bonds and Organometallic Chemistry. M. H. Chisholm, Professor R. C. Mehrotra's Sixtieth Birthday Commemoration Volume, *J. Organomet. Chem.*, **239**, 79-86 (1982).

137. Metal Alkoxides - Models for Metal Oxides. 3. Further Studies of the Carbonylation of Hexaalkoxides of Dimolybdenum and Ditungsten ($M\equiv M$) and Characterization of $M_2(OPr^i)_6(py)_2(\mu-CO)$ ($M=M$) Compounds. M. H. Chisholm, J. C. Huffman, J. Leonelli and I. P. Rothwell, *J. Am. Chem. Soc.*, **104**, 7030-7036 (1982).
138. The Molybdenum-Molybdenum Triple Bond. 12. Preparation and Characterization of 1,2-Di(tert-butylmercaptido)tetra(dimethylamido)dimolybdenum ($M\equiv M$). M. H. Chisholm, J. F. Corning and J. C. Huffman, *Inorg. Chem.*, **22**, 38-40 (1983).
139. Metal Alkoxides - Models for Metal Oxides. M. H. Chisholm, *ACS Symposium Series*, **211**, 243-268 (1983).
140. 1,2-Dibenzyltetradimethylamido-dimolybdenum and -Ditungsten ($M\equiv M$) Compounds and Their Reactions with Carbon Dioxide and 1,3-Diaryltriazines. A Radical Difference. M. J. Chetcuti, M. H. Chisholm, K. Folting, J. C. Huffman and J. Janos, *J. Am. Chem. Soc.*, **104**, 4684-4686 (1982).
141. 1,2-Dibenzyl and -Diaryltetradimethylamido-dimolybdenum and -Ditungsten Compounds: $M_2R_2(NMe_2)_4$ ($M\equiv M$). Structural Effects of Me_2N -to- M π -Bonding. M. J. Chetcuti, M. H. Chisholm, K. Folting, D. A. Haitko, J. C. Huffman and J. Janos, *J. Am. Chem. Soc.*, **105**, 1163-1170 (1983).
142. Bis(trimethylsilylmethylidene)tetrakis(trimethylphosphine)dibromodimolybdenum ($M\equiv M$). K. J. Ahmed, M. H. Chisholm, I. P. Rothwell and J. C. Huffman, *J. Am. Chem. Soc.*, **104**, 6453-6454 (1982).
143. Bonds Between Metal Atoms: A New Mode of Transition Metal Chemistry. M. H. Chisholm and F. A. Cotton, *C&E News Publication*, Vol. 60, June 28, 1982, pp. 40-46 and 50-54.
144. Oxidative-Additions to $(W\equiv W)^{6+}$ Centers: The Influence of Lewis Base Association Reactions. M. J. Chetcuti, M. H. Chisholm, J. C. Huffman and J. Leonelli, *J. Am. Chem. Soc.*, **105**, 292-293 (1983).
145. Reactions of $Mo_2(OR)_6$ ($M\equiv M$) Compounds ($R = Pr^i$ and Bu^t) with Benzoyl Peroxide. M. H. Chisholm, J. C. Huffman and C. C. Kirkpatrick, *Inorg. Chem.*, **22**, 1704-1707 (1983).
146. Incorporating Metal-Metal Multiple Bonds into Heterometallic Chains: Bis(tris(trimethylstanyl)tin)tetradimethylamido-dimolybdenum and -ditungsten and Related Compounds. M. J. Chetcuti, M. H. Chisholm, H.-T. Chiu and J. C. Huffman, *J. Am. Chem. Soc.*, **105**, 1060-1061 (1983).
147. Characterization of *bis*-(2,2'-bipyridine) and *bis*-(1,10-Phenanthroline) Derivatives of Molybdenum and Tungsten Carbonyls. Crystal and Molecular Structure of *cis*-Dicarbonyl *bis*-(2,2'-Bipyridine) Molybdenum(O). M. H. Chisholm, J. A. Connor, J. C. Huffman, E. M. Kober and C. Overton, *Inorg. Chem.*, **23**, 2298-2303 (1984).
148. β -Hydrogen Effects in Alkyl-Alkoxides of Dimolybdenum ($M\equiv M$). M. H. Chisholm, J. C. Huffman and R. J. Tatz, *J. Am. Chem. Soc.*, **105**, 2075-2077 (1983).
149. Isoelectronic Molecules with Triple Bonds to Metal Atoms ($M = Mo, W$): Crystal and Molecular Structures of Tris-tert-butoxytungsten-ethylidyne and -nitride. M. H. Chisholm, D. M. Hoffman and J. C. Huffman, *Inorg. Chem.*, **22**, 2903-2906 (1983).
150. Metal-Metal Bonds and Metal Carbon Bonds in the Chemistry of Molybdenum and Tungsten Alkoxides. M. H. Chisholm, *Polyhedron*, **2**, 681-721 (1983).
151. The Remarkable Role of Steric Factors in the Reactions of Alkynes ($HC\equiv CH$ and $MeCCMe$) with Ditungsten Hexaalkoxides: Crystal and Molecular Structures of $W_2(OPr^i)_6(py)_2(\mu-C_2H_2)$, $W_2(OCH_2Bu^t)_6(py)_2(\mu-C_2Me_2)$ and $W_2(OPr^i)_6(\mu-C_4R_4)(C_2R_2)$, where $R = H$ and Me . M. H. Chisholm, K. Folting, D. M. Hoffman, J. C. Huffman and J. Leonelli, *J. Chem. Soc., Chem. Commun.*, 589-591 (1983).
152. Quadruple Bonds Between Molybdenum Atoms Supported by Alkoxide Ligands. Structural Effects and Reactivity Patterns. M. H. Chisholm, K. Folting, J. C. Huffman and R. J. Tatz, *J. Am. Chem. Soc.*, **106**, 1153-1154 (1984).
153. Reactions of Metal-Metal Multiple Bonds. 9. α -Diketone Adducts of Ditungsten Hexaalkoxides: $W_2(OR)_6(O_2C_2R'_2)_2$ ($M-M$). M. H. Chisholm, J. C. Huffman and A.L. Ratermann, *Inorg. Chem.*, **22**, 4100-4105 (1983).

154. Coupling C≡C, C≡N and W≡W Bonds. Preparation, and Crystal and Molecular Structure of Hexaneopentoxypyridine[2-amido(2-)-W¹,W¹-5-amido(2-)-W²-3,4-dimethylhexa-2,4-diene]ditungsten W₂(OCH₂Bu¹)₆(py)(N[CMe]₄N). M. H. Chisholm, D. M. Hoffman and J. C. Huffman, *J. Chem. Soc., Chem. Commun.*, 967-968 (1983).
155. Reactions of Metal-Metal Multiple Bonds. 10. Reactions of Mo₂(OR)₆ (M≡M) and [M(OR)₄]_x Compounds with Molecular Oxygen. Preparation and Characterization of Oxo-Alkoxides of Molybdenum of Formula MoO₂(OR)₂, MoO₂(OR)₂(bpy), MoO(OR)₄, Mo₃O(OR)₁₀, Mo₄O₈(OR)₄(py)₄ and Mo₆O₁₀(OR)₁₂. M. H. Chisholm, K. Folting, J. C. Huffman and C. C. Kirkpatrick, *Inorg. Chem.*, 23, 1021-1037 (1984).
156. The Molybdenum-Molybdenum Triple Bond. 13. Preparations and Characterization of Bis(β-diketonate)tetraalkoxydimolybdenum and -ditungsten Compounds. M. H. Chisholm, K. Folting, J. C. Huffman and A. L. Ratermann, *Inorg. Chem.*, 23, 613-618 (1984).
157. Mo₂(SC₆H₂Me₃)₆. The First Example of a Compound Containing a Mo-Mo Triple Bond Supported by Six Mercapto Ligands. M. H. Chisholm, J. F. Corning and J. C. Huffman, *J. Am. Chem. Soc.*, 105, 5924-5925 (1983).
158. Inorganic Chemistry: Towards the 21st Century. M.H. Chisholm, Editor, *ACS Symposium Series*, 211, (1983).
159. Reactions of M-M Triple Bonds with C-N Triple Bonds: Adduct Formation (M = Mo) and Metathesis (M = W) as Seen in the Reactions Between Dimethylcyanamide and Hexaalkoxides of Dimolybdenum and Ditungsten. M. H. Chisholm, J. C. Huffman and N. S. Marchant, *J. Am. Chem. Soc.*, 105, 6162-6163 (1983).
160. Reactions of Metal-Metal Multiple Bonds. 11. A Comparison of the Reactivity of M₂(OR)₆ (M≡M) and M₂(OR)₄(R'COCHCOR')₂ (M≡M) Compounds (M = Mo, W) with the π-Acid Ligands CO, RC≡RC and RNC. M. H. Chisholm, J. F. Corning, K. Folting, J. C. Huffman, A. L. Raterman, I. P. Rothwell and W. E. Streib, *Inorg. Chem.*, 23, 1037-1042 (1984).
161. The Molybdenum-Molybdenum Triple Bond. 14. Preparation and Characterization of Mixed Alkoxy-Thiolate Compounds of Formula Mo₂(OR)₂(SAr)₄ (M≡M). M. H. Chisholm, J. F. Corning and J. C. Huffman, *Inorg. Chem.*, 23, 754-757 (1984).
162. Reactions of Metal-Metal Multiple Bonds. 12. Reactions of Organic Halides (Cl, Br and I) with Hexaalkoxydimolybdenum and -ditungsten (M≡M) Compounds. Preparation and Characterization of Hexaneopentoxydibromopyridinodimolybdenum (M=M). M. H. Chisholm, J. C. Huffman, A. L. Ratermann and C. Smith, *Inorg. Chem.*, 23, 1596-1599 (1984).
163. Molecular Structure and Dynamic Solution Behavior of the Bridging 1,3-Dimetallaallyl Ligand in (Me₃SiCH₂)₄W₂(μ-CSiMe₃)(μ-C₃R₂SiMe₃) Compounds (R = H, Me, Ph) Formed by Insertion of Alkynes into a Bridging (μ₂) Alkylidyne Ligand. M. H. Chisholm, J. A. Heppert and J. C. Huffman, *J. Am. Chem. Soc.*, 106, 1151-1153 (1984).
164. Octahedral Mo₆ Clusters Supported by Methoxide Ligands. M. H. Chisholm, J. A. Heppert and J. C. Huffman, *Polyhedron*, 3, 475-478 (1984).
165. A General Synthesis for Ditungsten Tetracarboxylates. Preparation of W-W Quadruple Bonds by Reductive-Elimination (Alkyl Group Disproportionation) from 1,2-Diethyl Compounds with W-W Triple Bonds. M. H. Chisholm, H.-T. Chiu and J. C. Huffman, *Polyhedron*, 3, 759-760 (1984).
166. Reactions of Metal-Metal Multiple Bonds. 13. Reactions of Diazoalkanes with Hexaalkoxides of Dimolybdenum and Ditungsten (M≡M). Preparation and Characterization of Mo₂(O-i-Pr)₆(N₂CPh₂)₂py, W₂(O-t-Bu)₆(N₂C(p-tolyl)₂)₂ and Mo(O-t-Bu)₄(N₂CPh₂). M. H. Chisholm, K. Folting, J. C. Huffman and A. L. Ratermann, *Inorg. Chem.*, 23, 2303-2311 (1984).
167. Theoretical and Experimental Studies of the Electronic Structure of the Mo₃(μ₃-O)(μ₃-OR)(μ-OR)₃(OR)₆ Type of Triangular Metal Atom Cluster Compound. M. H. Chisholm, F. A. Cotton, A. Fang and E. C. Kober, *Inorg. Chem.*, 23, 749-754 (1984).

168. Bis(2,2'-bipyridyl)diisopropoxymolybdenum(II): A Spin-State Equilibrium for a Complex of a Second Row Transition Element. M. H. Chisholm, D. J. Ironmonger, E. M. Kober and P. Thornton, *Polyhedron*, **4**, 1869-1874 (1985).
169. Metal Alkoxides: Models for Metal Oxides. 4. Alkyne Adducts of Ditungsten Hexaalkoxides and Evidence for an Equilibrium Between Dimetallatetrahedrane and Methylidyne Metal Complexes: $W_2(\mu-C_2H_2) \rightleftharpoons 2W\equiv CH$. M. H. Chisholm, K. Folting, D. M. Hoffman and J. C. Huffman, *J. Am. Chem. Soc.*, **106**, 6794-6805 (1984).
170. Notable Features in the Molecular Structure of $W_2(OCH_2-t-Bu)_6(NCNMe_2)_3$: Three Different Modes of Bonding for $NCNMe_2(2-)$ Ligands. M. H. Chisholm, K. Folting, J. C. Huffman and N. S. Marchant, *Polyhedron*, **3**, 1033-1035 (1984).
171. Metal Alkoxides - Models for Metal Oxides. 5. Coupling of Alkyne Ligands in Reactions Involving Ditungsten Hexaalkoxides: An Alternative to the Metathesis Reaction $M\equiv M + -C\equiv C- \rightarrow 2M\equiv C-$. M. H. Chisholm, D. M. Hoffman and J. C. Huffman. *J. Am. Chem. Soc.*, **106**, 6806-6815 (1984).
172. The Molybdenum-Molybdenum Triple Bond. 15. Compounds with Chains of Metal Atoms Having M-M Single and Triple Bonds: $M_2(M'(M'Me_3)_3)_2(NMe_2)_4$ ($M\equiv M$) Where $M = Mo$ and W and $M' = Si$ and Sn . M. H. Chisholm, H. T. Chiu, K. Folting and J. C. Huffman, *Inorg. Chem.*, **23**, 4097-4102 (1984).
173. Metal Alkoxides - Models for Metal Oxides. 6. The Linking of Alkyne and Nitrile Fragments at Ditungsten Centers. Preparation and Characterization of $W_2(O-t-Bu)_6(CHCHC(Ph)N)$, $W_2(O-i-Pr)_7(CH_2CHC(Ph)N)$, $W_2(OCH_2-t-Bu)_6-(N(CMe)_4N)$ and $W_2(O-i-Pr)_7(NHC(Me)-CHCHC(Me)N)$. M. H. Chisholm, D. M. Hoffman and J. C. Huffman, *J. Am. Chem. Soc.*, **106**, 6815-6826 (1984).
174. The Molybdenum-Molybdenum Triple Bond. 16. Bis[(trimethylsilyl)methylidene]-tetrakis(trimethylphosphine)dibromodimolybdenum ($M\equiv M$). An Example of a Non-Bridged Dinuclear Bis-Carbene Complex. K. J. Ahmed, M. H. Chisholm and J. C. Huffman, *Organometallics*, **4**, 1168-1174 (1985).
175. Reactions of Metal-Metal Multiple Bonds. 14. Synthesis and Characterization of Triangulo- W_3 and Mo_2W -oxo Capped Alkoxide Clusters. Comproportionation of M-M Triple Bonds, $\sigma^2\pi^4$ and d^0 Metal-oxo Groups: $M\equiv M + M\equiv O \rightarrow M_3(\mu_3-O)$. M. H. Chisholm, K. Folting, J. C. Huffman and E. M. Kober, *Inorg. Chem.*, **24**, 241-245 (1985).
176. Bis(benzyl)- and Bis(neopentyl)tetra(propionato)ditungsten ($M\equiv M$). Axial Ligation and Unprecedentedly Short W-W Distances for the R-W \equiv W-R Unit. M. H. Chisholm, D. M. Hoffman, J. C. Huffman, W. G. Van Der Sluys and S. Russo. *J. Am. Chem. Soc.*, **106**, 5386-5388 (1984).
177. A New Structure Type for a 6-Electron Triangulo Tungsten Cluster: $W_3(\mu_3-CMe)(\mu_2-O-i-Pr)_3(O-i-Pr)_6$. M. H. Chisholm, D. M. Hoffman and J. C. Huffman, *Inorg. Chem.*, **23**, 3683-3684 (1984).
178. Triple Bonds Between Molybdenum and Tungsten Atoms Supported by Thiolate Ligands: $(RS)_3M\equiv M(SR)_3$. M. H. Chisholm, J. F. Corning, K. Folting and J. C. Huffman, *Polyhedron*, **4**, 383-390 (1985).
179. $(i-PrO)_3Mo\equiv Mo(CH_2Ph)_2(O-i-Pr)(PMe_3)$: The First Example of a Compound Containing a Triple Bond Uniting Three and Four Coordinate Molybdenum Atoms and the Observation of Phosphine Promoted, Reversible Benzylalkoxy Migrations at the $(M\equiv M)^{6+}$ Center. M. H. Chisholm, J. C. Huffman and R. J. Tatz, *J. Am. Chem. Soc.*, **106**, 5385-5386 (1984).
180. Analogies Between Alkoxides and Oxide Structures in the Chemistry of Molybdenum and Tungsten. M. H. Chisholm, *J. Solid State Chemistry*, **57**, 120-133 (1985).
181. Dioxododecaisopropoxytetra-tungsten. Oxygen Atom Abstraction from Acetone in Reactions with Hexaisopropoxyditungsten ($M\equiv M$). T. P. Blatchford, M. H. Chisholm, K. Folting and J. C. Huffman, *J. Chem. Soc., Chem. Commun.*, 1295-1296 (1984).
182. 1,2-Dimetallacyclo-1,2-hexyne Compounds of Molybdenum and Tungsten. M. J. Chetcuti, M. H. Chisholm, H.-T. Chiu and J. C. Huffman, *Polyhedron*, **4**, 1213-1217 (1985).

183. Insertion Reactions of the Metal-Metal Triple Bonds in Hexaalkoxydimolybdenum and -ditungsten Compounds with Organic Isocyanates. Syntheses and Structures of $W_2(OCMe_3)_4[N(C_6H_5-C(O)O-CMe_3)_2]$ and $Mo_2(O-i-Pr)_4[N(C_6H_5)C(O)O-i-Pr]$. M. H. Chisholm, F. A. Cotton, K. Folting, J. C. Huffman, A. R. Ratermann and E. S. Shamshoum, *Inorg. Chem.*, **23**, 4423-4427 (1984).
184. The Molybdenum-Molybdenum Triple Bond. 17. Syntheses, Spectroscopic and Structural Characterizations of $Mo_4F_4(O-t-Bu)_8$ and $Mo_2F_2(O-t-Bu)_4(PMe_3)_2(Mo\equiv Mo)$. M. H. Chisholm, D. L. Clark and J. C. Huffman, *Polyhedron*, **4**, 1203-1211 (1985).
185. Metal Alkoxides: Models for Metal Oxides. 7. Trinuclear and Tetranuclear Alkylidyne Clusters of Tungsten Supported by Alkoxide Ligands. M.H. Chisholm, K. Folting, J. A. Heppert, D. M. Hoffman and J. C. Huffman, *J. Am. Chem. Soc.*, **107**, 1234-1241 (1985).
186. Reactions Involving the Triple Bond in Dimolybdenum and Ditungsten Hexaalkoxides and C-C, C-N and C-O Triple Bonds. M. H. Chisholm, D. M. Hoffman and J. C. Huffman, *Chem. Soc. Reviews*, **14**, 69-91 (1985).
187. Metal Alkoxides: Models for Metal Oxides. 8. Monocarbonyl Adducts of Ditungsten Hexaalkoxides ($M\equiv M$) ($RO = t-BuO, i-PrO$ and $t-BuCH_2O$) and the Dimer $[W_2(O-i-Pr)_6(\mu-CO)]_2$. M. H. Chisholm, D. M. Hoffman and J. C. Huffman, *Organometallics*, **4**, 986-993 (1985).
188. An Imido Capped Tungsten Cluster: $W_3(\mu-NH)(O-i-Pr)_{10}$. M. H. Chisholm, D. M. Hoffman and J. C. Huffman, *Inorg. Chem.*, **24**, 796-797 (1985).
189. $W_2Cl_3(NMe_2)_3(PMe_2Ph)_2$ and Its Reaction with Ethyne to Give $(PMe_2Ph)Cl_2W(\mu-NMe_2)(\mu-\eta^1, \eta^2-CHCH_2)(\mu-\eta^2, \eta^1-CH_2NMe)WCl(NMe_2)(PMe_2Ph)$: A Compound Containing an Azadimetallabicyclobutane Core and a σ, π -Vinyl Ligand. K. J. Ahmed, M. H. Chisholm, K. Folting and J. C. Huffman, *J. Chem. Soc., Chem. Commun.*, 152-153 (1985).
190. 1,3-Ditungstacyclobutadienes. 1. Reactions with Alkynes. Alkyne Adducts and 1,3-Dimetallaallyl Derivatives. M. H. Chisholm, J. C. Huffman and J. A. Heppert, *J. Am. Chem. Soc.*, **107**, 5116-5136 (1985).
191. Reaction between Bis(Benzyl)tetraisopropoxyditungsten ($M\equiv M$) and 2-Butyne: $W_2(CH_2Ph)_2(O-i-Pr)_4(\eta^2-C_2Me_2)_2$ and $W_2(H)(O-i-Pr)_4(\mu-CPh)(\mu-C_4Me_4)$. A Terminal Metal Hydride with a 1H NMR Resonance 20 ppm Downfield of Me_4Si . M. H. Chisholm, B. W. Eichhorn and J. C. Huffman, *Chem. Soc., Chem. Comm.*, 861-863 (1985).
192. Comparative Studies on the Electronic Structures of $W_2(O_2CH)_4$ and $W_2(O_2CH)_4(CH_3)_2$ by the Relativistic $X\alpha$ -SW Method: A d^3-d^3 Metal Dimer with a Quadruple Metal-Metal Bond. M. D. Braydich, B. E. Bursten, M. H. Chisholm and D. L. Clark, *J. Am. Chem. Soc.*, **107**, 4459-4465 (1985).
193. Metal Alkoxides - Models for Metal Oxides. 9. Hydridoditungsten-Alkoxides: $W_2(H)(O-i-Pr)_8Na$.diglyme and $W_2(H)(I)(OCH_2-t-Bu)_6(H_2NMe)$. Further Investigations of the Reaction Between $W_2(NMe_2)_6(M\equiv M)$ and $i-PrOH$ Leading to $W_4(H)_2(O-i-Pr)_{14}$. M. H. Chisholm, J. C. Huffman and C. A. Smith, *J. Am. Chem. Soc.*, **108**, 222-230 (1986).
194. The Tungsten-Tungsten Triple Bond. 10. Ditungsten Hexapivalate. M. H. Chisholm, J. A. Heppert, D. M. Hoffman and J. C. Huffman, *Inorg. Chem.*, **24**, 3214-3217 (1985).
195. A Diphosphide Adduct of Ditungstenhexaisopropoxide: $W_2P_2(O-i-Pr)_6(py)$. M. H. Chisholm, K. Folting, J. C. Huffman and J. J. Koh, *Polyhedron*, **4**, 893-895 (1985).
196. Alkoxides and Aryloxides. M. H. Chisholm and I. P. Rothwell, *Comprehensive Coordination Chemistry*, **2**, 335-360 (1987).
197. Amido and Imido Metal Complexes. M. H. Chisholm and I. P. Rothwell, *Comprehensive Coordination Chemistry*, **2**, 161-184 (1987).

198. The Tungsten-Tungsten Triple Bond. 11. Ligand Redistribution Reactions Involving Chloride and Dimethylamide Ligands at Dimolybdenum and Ditungsten ($M\equiv M$) Centers Induced by Added Tertiary Phosphines. Preparations and Characterizations of $W_2Cl_2(NMe_2)_4(Me_2PCH_2PMe_2)$, $W_2Cl_3(NMe_2)_3(PMe_2Ph)_2$ and $W_2Cl_4(NMe_2)_2(PMe_2Ph)_2$. K. J. Ahmed, M. H. Chisholm, K. Folting and J. C. Huffman, *Inorg. Chem.*, 24, 4039-4044 (1985).
199. Tetranuclear Carbido-Tungsten and Nitrido-Molybdenum Clusters Supported by Alkoxide Ligands: $W_4(C)(O-i-Pr)_{12}(NMe)$ and $Mo_4(N)_2(O-i-Pr)_{12}$. M. H. Chisholm, K. Folting, J. C. Huffman, J. Leonelli, N. S. Marchant, C. A. Smith and L. C. E. Taylor, *J. Am. Chem. Soc.*, 107, 3722-3724 (1985).
200. A Skewed Bridging Alkyne Adduct of a d^3-d^3 Tungsten Dimer: $W_2(\mu-NMe_2)_2(\mu-C_2Me_2)Cl_4(py)_2$. K. J. Ahmed, M. H. Chisholm and J. C. Huffman, *Organometallics*, 4, 1312-1313 (1985).
201. Trialkoxynitridomolybdenum Compounds: $(RO)_3Mo\equiv N$. Preparations, Structures ($R = t-Bu, i-Pr$) and Comparisons with the Tungsten Analogues. D. M.-T. Chan, M. H. Chisholm, K. Folting, J. C. Huffman and N. S. Marchant, *Inorg. Chem.*, 25, 4170-4174 (1986).
202. The Tungsten-Tungsten Triple Bond. 12. Bis(1,3-diaryltriazinido)bis(dimethylamido)diethylditungsten ($M\equiv M$) Compounds. M. H. Chisholm, H.-T. Chiu, J. C. Huffman and R. J. Wang, *Inorg. Chem.*, 25, 1092-1096 (1986).
203. Carbonyl Adducts of Dichlorotetrakisdimethylamidoditungsten and Insertion of Carbon Monoxide into a Tungsten-Amido Bond. K. J. Ahmed and M. H. Chisholm, *Organometallics*, 5, 185-189 (1986).
204. Interconverting Multiple Bonds Between Molybdenum and Tungsten Atoms: Oxidative Additions and Reductive Eliminations from Dinuclear Centers. M. H. Chisholm, *Polyhedron*, 5, 25-30 (1986).
205. Alkyne Adducts of Ditungsten Hexaneopentoxide and Alkylidyne Capped Tritungsten Complexes. M. H. Chisholm, B. K. Conroy, K. Folting, D. M. Hoffman and J. C. Huffman, *Organometallics*, 5, 2457-2465 (1986).
206. *Trans*-Bis(dimethylphenylphosphine)bis[dicarbido(4- σ -Pt, σ - W^1 , η^2 - W^2)pentakis(tert-butoxy)ditungsten ($M=M$)]platinum(II). R. J. Blau, M. H. Chisholm, K. Folting and R. J. Wang, *J. Chem. Soc., Chem. Commun.*, 1582-1584 (1985).
207. Paramagnetic 1,3-Dimetallacyclobutadienes of Tungsten (VI): 2,4-Bis(trimethylsilyl)1,3-dihalo-1,1,3,3-tetrakis(trimethylsilylmethyl)-1,3-ditungstacyclobutadienes. M. H. Chisholm, J. A. Heppert and J. C. Huffman, *J. Chem. Soc., Chem. Commun.*, 1466-1467 (1985).
208. Attack by Allenes on a Bridging Alkylidyne Ligand at a Ditungsten Center: Formation of a Bridging Allyl- η^3 - W^1 , α - W^2 -alkylidene Ligand. M. H. Chisholm, K. Folting, J. A. Heppert and W. E. Streib, *J. Chem. Soc., Chem. Commun.*, 1755-1757 (1985).
209. Attack of Isocyanide and Carbon Monoxide on a Bridging Alkylidyne Ligand at a Ditungsten Center. Cleavage of the C-N and C-O Triple Bonds with Respective Formation of Tungsten-Imido and -Oxo Groups and Concomitant Addition of the Carbon Atom to the Bridging Alkylidyne Carbon Yielding a Bridging α - W^1 , η^2 - W^2 Alkynyl Ligand. M. H. Chisholm, J. A. Heppert, J. C. Huffman and W. E. Streib, *J. Chem. Soc., Chem. Commun.*, 1771-1773 (1985).
210. A Study of the Formation of a σ, π -vinyl Ligand by Hydrogen Atom Transfer from a Coordinated Dimethylamide to a Perpendicularly Bonded Ethyne Ligand. Preparation and Characterization of $(PMe_2Ph)Cl_2W(\mu-NMe_2)(\mu-\eta^1, \eta^2-CHCH_2)(\mu-\eta^2-CH_2NMe)WCl-(NMe_2)(PMe_2Ph)$. K. J. Ahmed, M. H. Chisholm, K. Folting and J. C. Huffman, *J. Am. Chem. Soc.*, 108, 989-999 (1986).
211. Unexpected Products Formed by the Addition of Halogens [X_2 ($= I_2$ and Br_2)] to $W_2(O_2CBu^t)_4$ ($M^4 M$): The X-Ray Crystal Structures of $[W_2(O_2CBu^t)_5 \cdot 2Bu^tCONMe_2]^+ [W_2I_4(O_2CBu^t)_2]^-$ and $W_2Br_2(O_2CBu^t)_3 \cdot 2THF$, M. H. Chisholm, H.-T. Chiu and J. C. Huffman, *Polyhedron*, 5, 1377-1380 (1986).
212. Chemistry of 1,3-ditungstacyclobutadienes. M.H. Chisholm and J. A. Heppert, *Advances in Organometallic Chemistry*, 26, 97-124 (1986).

213. Chemistry of Triple Bonds, $\sigma^2\pi^4$, Between Molybdenum and Tungsten Atoms: Developing the Chemistry of an Inorganic Functional Group. M. H. Chisholm, *Angew. Chemie Int. Ed. Engl.*, 25, 21-30 (1986) [*Angew. Chemie* 98, 21 (1986)].
214. Metal Alkoxides - Models for Metal Oxides. 10. Synthesis and Properties of Alkyl-Alkoxides of Formula $1,2-Mo_2R_2(OR')_4$ and $Mo_2R(OR')_5$ ($M\equiv M$). M. H. Chisholm and R. J. Tatz, *Organometallics*, 5, 1590-1598 (1986).
215. Metal Alkoxides - Models for Metal Oxides. 11. Synthesis and Properties of Mixed Alkyl/Aryl/Benzyl-Alkoxides of Formula $1,2-W_2R_2(OR')_4$ and $W_2R(OR')_5$ ($M\equiv M$). M. H. Chisholm, B. W. Eichhorn, K. Folting, J. C. Huffman and R. J. Tatz, *Organometallics*, 5, 1599-1606 (1986).
216. Alkyne Adducts of Mixed Chloro-Dimethylamido Ditungsten Compounds. K. J. Ahmed, M. H. Chisholm, K. Folting and J. C. Huffman, *Organometallics*, 5, 2171-2181 (1986).
217. Synthesis and Characterization of Bis(neopentyl)tetrakis(acetato)dimolybdenum. A Notably Short Metal-Metal Distance for a d^3-d^3 Dinuclear Compound Containing a M-M Triple Bond of Valence Molecular Orbital Configuration $\pi^4\delta^2$. M. H. Chisholm, J. C. Huffman and W. G. Van Der Sluys, *Inorg. Chim. Acta*, 116, L13-L14 (1986).
218. 1,3-Ditungstacyclobutadienes. 2. The Synthesis of Alkoxide Derivatives of $W_2(\mu-CSiMe_3)_2(CH_2SiMe_3)_4$ and Investigations of the Electronic Structures of the $M_2(\mu-CSiMe_3)_2$ Core as a Function of d^n-d^n Interactions: $n = O, M = Ta$; $n = 1, M = W$ and $n = , M = Re$. M. H. Chisholm, J. A. Heppert, E. M. Kober and D. L. Lichtenberger, *Organometallics*, 6, 1065-1073 (1987).
219. Evidence for Equilibria Involving Alkylidyne and μ -Alkyne Complexes in the Chemistry of Tungsten Alkoxides: $2(RO)_3W\equiv CR' \rightleftharpoons W_2(OR)_6(\mu-C_2R'_2)$. M. H. Chisholm, B. K. Conroy, J. C. Huffman and N. S. Marchant, *Angew. Chem. Int. Ed. Engl.*, 25, 446-447 (1986) [*Angew. Chemie* 98, 448 (1986)].
220. An Unexpected Carbon-Carbon Bond Formation in the Reaction Between $Mo_2(ONp)_6(\mu-NCNEt_2)$ and $MeC\equiv CMe$. M. H. Chisholm, K. Folting, J. C. Huffman and N. S. Marchant, *Organometallics*, 5, 602-603 (1986).
221. Electronic Structure and Bonding in Monocarbonyl Adducts of Dimolybdenum and Ditungsten Hexaalkoxides: A Theoretical and Spectroscopic Investigation into the Mechanism of M-M and C-O Bond Order Reduction. P. J. Blower, M. H. Chisholm, D. L. Clark and B. W. Eichhorn, *Organometallics*, 5, 2125-2138 (1986).
222. Carbonylation of $(Bu^tO)_3W\equiv CNMe_2$ and $(Pr^iO)_3(py)_2W\equiv CNMe_2$. Two Different Modes of Carbon-Carbon Bond Formation. M. H. Chisholm, J. C. Huffman and N. S. Marchant, *J. Chem. Soc. Chem. Comm.*, 717-718 (1986).
223. The Tungsten-Tungsten Triple Bond. XIII. Bisalkyltetra-carboxylates of Dimolybdenum and Ditungsten. Triple Bonds Between Metal Atoms with the Valence M.O. Description $\pi^4\delta^2$. M. H. Chisholm, D. L. Clark, J. C. Huffman, W. G. Van Der Sluys, E. M. Kober, D. L. Lichtenberger and B. E. Bursten, *J. Am. Chem. Soc.*, 109, 6796-6816 (1987).
224. Competitive Carbon-Carbon Bond Formation and Cleavage and Cluster Formation in the Reaction Between 3-Hexyne and Hexakis(isopropoxy)ditungsten. M. H. Chisholm, B. K. Conroy and J. C. Huffman, *Organometallics*, 5, 2384-2386 (1986).
225. The Tungsten-Tungsten Triple Bond. XIV. Factors Influencing Triple Bonds Between Tungsten Atoms Having Valence M.O. Configurations of $\sigma^2\pi^4$ and $\pi^4\delta^2$ and Preparation and Characterization of Bis(neopentyl)bis(acetato)bis(diethylthiocarbamate)-ditungsten. M. H. Chisholm, D. L. Clark, J. C. Huffman and W. G. Van Der Sluys, *J. Am. Chem. Soc.*, 109, 6817-6825 (1987).
226. Preparation, Structure and Bonding in $Mo_2(OCH_2CMe_3)_6(\mu-\eta^1-\eta^2-NCNMe_2)$. M. H. Chisholm, J. C. Huffman and N. S. Marchant, *Organometallics*, 6, 1073-1080 (1987).
227. Carbon-Nitrogen Bond Formation in the Reaction Between Tetrakisdimethyl-amidomolybdenum(IV) and 2,6-Dimethylphenylisocyanide. Preparation and Characterization of the First Homoleptic Metal-laamidine Complex: $Mo(\eta^2-Me_2NCN-2,6-Me_2-C_6H_3)_4$. M. H. Chisholm, C. E. Hammond, D. Ho and J. C. Huffman, *J. Am. Chem. Soc.*, 108, 7860-7861 (1986).

228. Reactions Involving Alkynes and Tungsten-Tungsten Triple Bonds Supported by Alkoxide Ligands. M. H. Chisholm, B. K. Conroy, B. W. Eichhorn, K. Folting, D. M. Hoffman, J. C. Huffman and N. S. Marchant, *Polyhedron, Symposium-in-Print*, 6, 783-792 (1987).
229. $\text{Mo}_3[\text{C}(\text{O})\text{NMe}_2]_6(\text{CO})_6(\text{HNMe}_2)_2$. An Unexpected Product Formed in the Carbonylation of $\text{Mo}(\text{NMe}_2)_4$ Displaying Three Distinct Modes of Carbamoyl-Molybdenum Bonding. M. H. Chisholm, C. E. Hammond and J. C. Huffman, *Organometallics*, 6, 210-211 (1987).
230. Tris-N,N'-dimethylethylenediamido-dimolybdenum and -ditungsten. A Comparison of Eclipsed and Staggered Triple Bonds, $\sigma^2\pi^4$, Between Molybdenum and Tungsten Atoms in $\text{X}_3\text{M}\equiv\text{MX}_3$ Compounds. T. P. Blatchford, M. H. Chisholm and J. C. Huffman, *Inorg. Chem.*, 26, 1920-1925 (1987).
231. Reactions of Metal-Metal Multiple Bonds. 15. Reactions of $\text{M}_2(\text{OR})_6(\text{M}\equiv\text{M})$ Compounds (M = Mo and W) With 9,10-phenanthrenequinone and Tetra-chloro-1,2-benzoquinone. T. P. Blatchford, M. H. Chisholm and J. C. Huffman, *Inorg. Chem.*, 27, 2059-2070 (1988).
232. Recent Advances in the Chemistry of Metal-Metal Multiple Bonds. M. H. Chisholm, Ed., *Polyhedron Symposium-in-Print*, 6, No.4, 1987, Pergamon Press:Oxford.
233. Evaluating the Role of π -Donor Ligands in Transition Metal Chemistry. Applications of Fenske-Hall Molecular Orbital Calculations and Mulliken Population Analyses. M. H. Chisholm and D. L. Clark, *Comments on Inorganic Chemistry*, 6, 23-39 (1987).
234. The First Observation of the Equilibrium: $\text{M}\equiv\text{M} \rightleftharpoons \text{M}_4$, Where M is a Transition Element. Hexaisopropoxyditungsten and Its Dimer Dodecaisopropoxytetratungsten. M. H. Chisholm, D. L. Clark, K. Folting and J. C. Huffman, *Angew. Chemie*, 25, 1014-1015 (1986) [*Angew. Chemie*, 98, 1021 (1986)].
235. A Comparison of the Relative π -Donor Abilities of Amido and Phosphido Ligands. 1,2-Bis(di-t-butylphosphido)tetrakis-(dimethylamido)dimolybdenum and -ditungsten: $1,2\text{-M}_2(\text{P}(\text{t-Bu})_2)_2(\text{NMe}_2)_4$ (M \equiv M). W. E. Buhro, M. H. Chisholm, K. Folting and J. C. Huffman, *J. Am. Chem. Soc.*, 109, 905-906 (1987).
236. Reactions of Ditungsten Hexa-alkoxides with Alkynylplatinum(II) Complexes: Formation of Heterometallic Dicarbido Complexes in Competition with Products Derived from Alkyne Metathesis. R. J. Blau, M. H. Chisholm, K. Folting and R. J. Wang, *J. Am. Chem. Soc.*, 109, 4552-4560 (1987).
237. Organometallic Chemistry of Molybdenum and Tungsten Supported by Alkoxide Ligands. W. E. Buhro and M. H. Chisholm, *Adv. Organometallic Chem.*, 27, 311-369 (1987).
238. Diamagnetic Anisotropy of M \equiv M Bonded Molecules for M = Mo or W: How Much π Is There and How Do We Slice It? T. P. Blatchford, M. H. Chisholm and J. C. Huffman, *Polyhedron*, 6, 1677-1680 (1987).
239. Cleavage and Formation of Carbon-Carbon and Carbon-Oxygen Bonds in Reactions Involving Dimolybdenum and Ditungsten Hexaalkoxides. M. H. Chisholm, *Nouveau Journal de Chimie (New Journal of Chemistry)*, 11, 459-465 (1987).
240. A Reaction Converting a W-W Triple Bond to a Double Bond. Tetrakis-Diethylidithiophosphate-Disulfide-Ditungsten, Preparation and Characterization. M. H. Chisholm, D. M. Ho, J. C. Huffman and W. G. Van Der Sluys, *Polyhedron*, 6, 1115-1123 (1987).
241. Preparation and Characterization of $\text{NaW}_2\text{Cl}_7(\text{THF})_5$. A Synthetically Useful Precursor for $\text{X}_3\text{W}\equiv\text{WX}_3$ Compounds Where X = $\text{CH}_2\text{-t-Bu}$, NMe_2 and O-t-Bu . M. H. Chisholm, B. W. Eichhorn, K. Folting, J. C. Huffman, C. D. Ontiveros, W. E. Streib and W. G. Van Der Sluys, *Inorg. Chem.*, 26, 3182-3186 (1987).
242. Metal Alkoxides - Models for Metal Oxides. 12. The First Molecular Carbido Cluster of Tungsten, $\text{W}_4(\text{C})(\text{NMe})(\text{O-i-Pr})_{12}$, and ^{13}C NMR Spectroscopic Evidence for a Related Oxo-Carbido Cluster, $\text{W}_4(\text{C})(\text{O})(\text{O-i-Pr})_{12}$, Formed in the Stepwise Reductive Cleavage of Carbon Monoxide by Lower-Valent Tungsten Alkoxides. M. H. Chisholm, D. L. Clark, J. C. Huffman and C. A. Smith, *Organometallics*, 6, 1280-1291 (1987).

243. Electronic Absorption Spectra of M_2L_6 Compounds Containing Metal-Metal Triple Bonds of $\sigma^2\pi^4$ Configuration. M. H. Chisholm, D. L. Clark, E. M. Kober and W. G. Van Der Sluys, *Polyhedron Symposium-In-Print*, **6**, 723-727 (1987).
244. Monoisocyanide Adducts of Ditungsten Hexaalkoxides. Synthetic, Structural and Theoretical Investigations into the Nature of $C\equiv N$ Bond Order Reduction. M. H. Chisholm, D. L. Clark, D. Ho and J. C. Huffman, *Organometallics*, **6**, 1532-1542 (1987).
245. The First Hydrocarbyl Trinuclear and Tetranuclear Clusters of Tungsten: $W_3O(CH_2Ph)(O-i-Pr)_9$; $W_3O(R)_2(O-i-Pr)_8$, where $R = CH_2Ph$ and Ph , and $W_4(p-tolyl)_2(O-i-Pr)_{10}$. M. H. Chisholm, K. Folting, B. W. Eichhorn and J. C. Huffman, *J. Am. Chem. Soc.*, **109**, 3146-3147 (1987).
246. Synthesis and Reactivity of Compounds of the Formula $W(S)(OR)_4$. M. H. Chisholm, J. C. Huffman and J. W. Pasterczyk, *Polyhedron*, **6**, 1551-1557 (1987).
247. The First Example of a d^3-d^3 Dinuclear Compound Containing Four Coordinate Metal Atoms Sharing a Pair of Bridging Ligands: $[(Bu^tO)_2W(\mu-PPh_2)]_2$. W. E. Buhro, M. H. Chisholm, K. Folting, B. W. Eichhorn and J. C. Huffman, *J. Chem. Soc., Chem. Commun.*, 845-847 (1987).
248. An Unbridged Triple Bond Uniting $d^6-Mo(O)$ and $d^2-Mo(IV)$ Atoms: $Mo_2(O-i-Pr)_4(dmpe)_2$. M. H. Chisholm, J. C. Huffman and W. G. Van Der Sluys, *J. Am. Chem. Soc.*, **109**, 2514-2515 (1987).
249. Tungsten-Carbon, Carbon-Hydrogen, and Carbon-Carbon Bond Activation in the Chemistry of $1,2-W_2R_2(OR')_4 (W\equiv W)$ Complexes. 1. Alkyne-Promoted Metal-to-Metal Alkyl Migrations $W\equiv W/C\equiv C$ Bond Metathesis, and Metallacyclopentene Formation. M. H. Chisholm, B. W. Eichhorn, K. Folting, and J. C. Huffman, *Organometallics*, **8**, 49-66 (1989).
250. Tetranuclear Halide-Alkoxide Clusters of Molybdenum Formed by the Coupling of Two Metal-Metal Triple Bonds. Synthesis, Characterization and Molecular Structures of $Mo_4F_2(O-i-Pr)_{10}$, $Mo_4X_3(O-i-Pr)_9$ and $Mo_4X_4(O-i-Pr)_8$ Compounds, Where $X = Cl, Br$ and I . M. H. Chisholm, D. L. Clark, R. J. Errington, K. Folting and J. C. Huffman, *Inorg. Chem.*, **27**, 2071-2084 (1988).
251. A Molecular Model for the Reductive Cleavage of Carbon Monoxide to Carbide and Oxide on Reduced Metal Oxides. M. H. Chisholm, *J. Organomet. Chem.*, **334**, 77-84 (1987).
252. Hexakisisopropoxyditungsten and Dodecaisopropoxytetraungsten: $W_2(O-i-Pr)_6$ and $W_4(O-i-Pr)_{12}$. I. Preparation, Structure and Bonding. The First Example of a Metal-Metal Triple Bond and Its 12-Electron Cluster. Analogies with Ethyne and Cyclobutadiene. M. H. Chisholm, D. L. Clark, K. Folting, J. C. Huffman and M. Hampden-Smith, *J. Am. Chem. Soc.*, **109**, 7750-7761 (1987).
253. Preparation and Characterization of Hexacyclohexoxido- and Trispinacolato-ditungsten ($M\equiv M$). A Comparison of Staggered and Eclipsed Ethane-like $O_3W\equiv WO_3$ Units. M. H. Chisholm, K. Folting, M. Hampden-Smith and C. A. Smith, *Polyhedron*, **6**, 1747-1755 (1987).
254. Metal Alkoxides: Models for Metal Oxides. 13. NMR Spectroscopic and Theoretical Investigations into the Reduction of Alkynes Bonded to Hexaalkoxides of Dimolybdenum and Ditungsten. M. H. Chisholm, B. K. Conroy, D. L. Clark and J. C. Huffman, *Polyhedron Symposium-in-Print*, **7**, 903-918 (1988).
255. $(\eta^3-P_3)W(OCH_2Bu^t)_3(HNMe_2)$ Formed by Cleavage of the $W\equiv W$ Bond in the Reaction Between $W_2(OCH_2Bu^t)_6(HNMe_2)_2$ and P_4 . M. H. Chisholm, J. C. Huffman and J. W. Pasterczyk, *Inorganica Chimica Acta*, **133**, 17-18 (1987).
256. Phosphinocarboxylate Ligands Formed by the Insertion of Carbon Dioxide into Metal-Phosphido Bonds. Preparation and Structural Characterization of Tetrakis-(di-tert-butylphosphinocarboxylato)dimolybdenum. W. E. Buhro, M. H. Chisholm and J. C. Huffman, *Inorg. Chem.*, **26**, 3087-3088 (1987).
257. The First Observation of Olefinic $C=C$ Double Bond Coordination to a $M\equiv M$ Triple Bond. A Bisethylene Adduct of Ditungstenhexaneopentoxide. M. H. Chisholm and M. Hampden-Smith, *Angew. Chemie, Int. Ed. Engl.*, **26**, 903-904 (1987) [*Angew. Chemie*, **99**, 936 (1987)].
258. $W_2(n-Pr)_2(\eta^2-C_2Me_2)_2(O-i-Pr)_4$, $W_2(\mu-C_2Me_2)_2(O-i-Pr)_4$ and $W_4(\mu-C_2Me_2)_2(\eta^2-C_2Me_2)_2(O-i-Pr)_6$. Competitive α - and β -CH Activation Pathways at a Dimetal Center. M. H. Chisholm, B. W. Eichhorn and J. C. Huffman, *Organometallics*, **6**, 2264-2265 (1987).

259. Carbon-Hydrogen Bond Activation and Carbon-Carbon Bond Formation in the Reaction Between Ethylene and Hexakis(isopropoxy)ditungsten. M. H. Chisholm and M. Hampden-Smith, *J. Am. Chem. Soc.*, **109**, 5871 (1987).
260. The Tungsten-Tungsten Triple Bond. XV. Synthesis, Structure and Reactivity of 1,2-W₂[CH(SiMe₃)₂]₂(NMe₂)₄: The Remarkable Inertness of a Sterically-Encumbered Tungsten-Amido Complex. M. H. Chisholm, B. W. Eichhorn, K. Folting and J. C. Huffman, *Inorganica Chimica Acta*, **144**, 193-199 (1988).
261. 1,2-Bis(di-tert-butylarsenido)tetrakis(dimethylamido)dimolybdenum and -Ditungsten. Synthesis, Structures, and Solution Behavior. M. H. Chisholm, J. C. Huffman and J. W. Pasterczyk, *Inorg. Chem.*, **26**, 3781-3785 (1987).
262. Preparation and Structure of [Mo₄(OMe)₂(OiPr)₁₀]; Comments on Why [W₂(OiPr)₆] Dimerizes, Whereas [Mo₂(OiPr)₆] Does Not. M. H. Chisholm, C. E. Hammond, M. Hampden-Smith, J. C. Huffman and W. G. Van Der Sluys, *Angew. Chem. Int. Ed. Engl.*, **26**, 904-906 (1987) [*Angew. Chemie* **99**, 937 (1987)].
263. Molybdenum Hexadimethylamide. M.H. Chisholm, C. E. Hammond and J. C. Huffman, *J. Chem. Soc., Chem. Commun.*, 1423-1424 (1987).
264. Hexakis(isopropoxy)ditungsten and Dodeca(isopropoxy)tetratungsten: W₂(O-i-Pr)₆ and W₄(O-i-Pr)₁₂. II. Studies of Cluster Dynamics and the Equilibrium between the 12-Electron Cluster and Two Metal-Metal Triple Bonds. A Symmetry Allowed [$\pi_s^2 + \pi_s^2$] Cycloaddition Reaction and Comparisons with the Chemistry of Cyclobutadiene. M. H. Chisholm, D. L. Clark and M. Hampden-Smith, *J. Am. Chem. Soc.*, **111**, 574-586 (1989).
265. A Study of the Reaction Between Mo₂(OCH₂CMe₃)₆(μ - η^1 , η^2 -NCNR₂) Compounds (R = Me and Et) and 2-Butyne. M. H. Chisholm, J. C. Huffman and N. S. Marchant, *Polyhedron Symposium-in-Print*, **7**, 919-930 (1988).
266. Tungsten-Carbon, Carbon-Hydrogen, and Carbon-Carbon Bond Activation in the Chemistry of 1,2-W₂R₂(OR')₄ (W \equiv W) Complexes. 2. Metal-Carbon Bond Homolysis and Competitive Alkane and Dihydrogen Eliminations in Double α -Hydrogen-Activation Processes. M. H. Chisholm, B. W. Eichhorn and J. C. Huffman, *Organometallics*, **8**, 67-79 (1989).
267. Preparation and Characterization of the Ditungstenheptachlorobis(tetrahydrofuran) and Ditungstenoctachlorotetrahydrofuran Anions: [Ph₄P][W₂Cl₇(THF)₂] and [Ph₄P][W₂Cl₈(THF)]. D. J. Bergs, M. H. Chisholm, K. Folting, J. C. Huffman and K. A. Stahl, *Inorg. Chem.*, **27**, 2950-2954 (1988).
268. Preparation and Isolation of Crystalline Samples by Low Temperature Solution Techniques. M. H. Chisholm and D. L. Clark, *ACS Symposium Series*, **357**, 3.1 (1987).
269. W₃(O-i-Pr)₉(Cl)₂(μ_3 -CMe). An Unexpected Mode of μ_3 -Ethyldiyne Bonding and Dynamic Solution Behavior. M. H. Chisholm, K. Folting, J. C. Huffman and J. A. Klang, *Organometallics*, **7**, 1033-1036 (1988).
270. Electronic Structure and Bonding in Halide- and Alkoxide-Supported Tetranuclear Molybdenum Clusters. B. E. Bursten, M. H. Chisholm and D. L. Clark, *Inorg. Chem.*, **27**, 2084-2096 (1988).
271. Tungsten-Carbon, Carbon-Hydrogen, and Carbon-Carbon Bond Activation in the Chemistry of W₂R₂(OR')₄ (W \equiv W) Complexes. 3. Competitive α -Hydrogen versus β -Hydrogen Eliminations and Ethylene-to-Acetylene Hydrogen Transfers. M. H. Chisholm, B. W. Eichhorn and J. C. Huffman, *Organometallics*, **8**, 80-89 (1989).
272. Mo(NMe₂)₆Li₂(THF)₂. M. H. Chisholm, C. E. Hammond and J. C. Huffman, *Polyhedron*, **7**, 399-400 (1988).

273. Metal Alkoxides: Models for Metal Oxides. 15. Carbon-Carbon and Carbon-Hydrogen Bond Activation in the Reactions Between Ethylene and Ditungsten Hexaalkoxides: $W_2(OCH_2-t-Bu)_6(\eta^2-C_2H_4)_2$, $W_2(OR)_6(CH_2)_4(\eta^2-C_2H_4)$ and $W_2(OR)_6(\mu-CCH_2CH_2CH_2)$, where R = CH_2-t-Bu , $i-Pr$, $cyclo-C_5H_9$ and $cyclo-C_6H_{11}$. Preparations, Properties, Structures and Reaction Mechanisms. M. H. Chisholm, J. C. Huffman and M. J. Hampden-Smith, *J. Am. Chem. Soc.*, **111**, 5284-5299 (1989).
274. 1,3-Ditungstacyclobutadienes. 3. A Comparison of the Influence of the Supporting Ligands, Pr^iO versus Me_3SiCH_2 , on the Reactivity of the $M_2(\mu-CR)_2$ Core Toward Alkynes. M. H. Chisholm and C. D. Ontiveros, *Polyhedron Symposium-in-Print*, **7**, 1015-1021 (1988).
275. Reactivity of Bridging Hydrocarbyl Ligands. *Polyhedron Symposium-in-Print*, No. 4, M. H. Chisholm, Editor, **7**, #10/11 (1988).
276. Carbon-Nitrogen Bond Formation in the Reactions of Unsaturated Molecules with $Mo(NMe_2)_4$. M. H. Chisholm, C. E. Hammond and J. C. Huffman, *Proc. Ind. Acad. Sci.*, **97**, 199-205 (1988).
277. NMR Spectroscopic and Theoretical Investigation of the Bonding in $W_3(OR)_9(\mu-CCH_3)$ and Its Comparison to $Co_3(CO)_9(\mu_3-CCH_3)$. M. H. Chisholm, B. K. Conroy and J. D. Martin, *Proc. Ind. Acad. Sci.*, **97**, 189-194 (1988).
278. Heavier Main-Group Atoms as Ligands to Transition-Metal Centers. M. H. Chisholm, K. Folting, J. C. Huffman and J. W. Pasterczyk, *Proc. Ind. Acad. Sci.*, **97**, 195-199 (1988)
279. Alkoxide Clusters of Molybdenum and Tungsten As Templates for Organometallic Chemistry: Comparison with Carbonyl Clusters of Later Transition Elements. M. H. Chisholm, D. L. Clark, M. J. Hampden-Smith and D. M. Hoffman, *Angew. Chem. Intl. Ed. Engl.*, **28**, 432-444 (1989) [*Angew. Chem.*, **101**, 446 (1989)].
280. $Mo(OH)_4^{n+}$ ($n = 0, 2$); Tetrahedral or Square-Planar? The d^n-d^{10-n} Hole Formalism for π -donor and π -acceptor Ligand Fields. R. H. Cayton, M. H. Chisholm, D. L. Clark and C. E. Hammond, *J. Am. Chem. Soc.*, **111**, 2751-2755 (1989).
281. Tetrakisdimethylamidozirconium and Its Dimethylamido Lithium Adduct: Structures of $[Zr(NMe_2)_4]_2$ and $Zr(NMe_2)_6Li_2(THF)_2$. M. H. Chisholm, C. E. Hammond and J. C. Huffman, *Polyhedron*, **7**, 2515-2520 (1988).
282. Diallyl- and Bis(2-methylallyl)tetra(dimethylamido)ditungsten: $W_2(\mu-\eta^3-C_3H_5)_2(NMe_2)_4$ and $W_2(\eta^1-C_4H_7)_2(NMe_2)_4 (M \equiv M)$. Comments on Ligand-Metal π -Interactions at $(W \equiv W)^{6+}$ Centers. M. H. Chisholm, M. J. Hampden-Smith, J. C. Huffman and K. G. Moodley, *J. Am. Chem. Soc.*, **110**, 4070-4071 (1988).
283. An Allene Adduct of Ditungsten Hexa-*tert*-butoxide: Prediction of a Stabilized $\mu-\eta^3-CH_2CCH_2$ Moiety. R. Cayton, M. H. Chisholm and M. J. Hampden-Smith, *J. Am. Chem. Soc.*, **110**, 4438-4440 (1988).
284. A New Class of Homoleptic 12-Electron Molybdenum and Tungsten Alkoxide Clusters of Formula $[M_4(OR)_{12}]$. M. H. Chisholm, K. Folting, C. E. Hammond, J. C. Huffman and M. J. Hampden-Smith, *J. Am. Chem. Soc.*, **110**, 3314-3315 (1988).
285. Metal Alkoxides - Models for Metal Oxides. 14. Carbonylation of an Ethylidyne Capped Tritungsten Alkoxide Cluster. $W_3(\mu-CMe)(O-i-Pr)_9(CO)_2$, Preparation, Properties and Structure. M. H. Chisholm, K. Folting, J. C. Huffman, J. A. Klang and W. E. Streib, *Organometallics*, **8**, 89-93 (1989).
286. Unbridged and Bridged Isomers of $W_2(PCy_2)_2(NMe_2)_4$: Preparations, Characterizations and Comments on Thermodynamic and Activation Parameters for the Closing of Phosphido Bridges in these d^3-d^3 Dinuclear Compounds. W. E. Buhro, M. H. Chisholm, K. Folting, J. C. Huffman, J. D. Martin and W. E. Streib, *J. Am. Chem. Soc.*, **110**, 6563-6565 (1988).
287. A Phosphido Capped Tritungsten Alkoxide Cluster: $W_3(\mu_3-P)-(\mu-OCH_2-t-Bu)_3(OCH_2-t-Bu)_6$ and Speculation Upon the Existence of a Reactive $(t-BuCH_2O)_3W \equiv P$ Intermediate. M. H. Chisholm, K. Folting and J. W. Pasterczyk, *Inorg. Chem.*, **27**, 3057-3058 (1988).

288. Reactions Between Certain Trialkoxytungstenalkylidyne Complexes and Carbon Monoxide. Competitive C-C Bond Formation Leading to Alkyne or Ketenyl Complexes. M. H. Chisholm, D. Ho, J. C. Huffman and N. S. Marchant, *Organometallics*, **8**, 1626-1636 (1989).
289. 1,3-Ditungstacyclobutadienes. 4. 1:1 Diphenyldiazomethane Adducts: $W_2(\mu\text{-CSi-Me}_3)_2X_4\cdot(N_2CPh_2)$. A Comparison of the Effects of the Supporting Ligands, X = CH_2SiMe_3 Versus X = $O\text{-}i\text{-Pr}$. M. H. Chisholm, J. A. Heppert, J. C. Huffman and C. D. Ontiveros, *Organometallics*, **8**, 976-982 (1989).
290. The Tungsten-Tungsten Triple Bond. 16. Bis(cyclopentadienyl)- and Bis(indenyl)tetra-dimethylamidoditungsten ($W\equiv W$). M. H. Chisholm, M. J. Hampden-Smith, K. A. Stahl, J. C. Huffman, J. D. Martin and K. G. Moodley, *Polyhedron*, **7**, 1991-1999 (1988).
291. Metal Alkoxides: Models for Metal Oxides. 16. Synthesis and Characterization of a New Class of Homoleptic 12-Electron Molybdenum and Tungsten Alkoxide Clusters of Formula $M_4(OR)_{12}$: Structural Characterization of $Mo_4(OCH_2\text{-}i\text{-Bu})_{12}\cdot(HOCH_2\text{-}i\text{-Bu})$. M. H. Chisholm, K. Folting, C. E. Hammond, M. J. Hampden-Smith and K. G. Moodley, *J. Am. Chem. Soc.*, **111**, 5300-5312 (1989).
292. Reactions Involving Carbon Dioxide and Mixed Amido-Phosphido Dinuclear Compounds: $M_2(NMe_2)_4(PR_2)_2(M\equiv M)$, where M = Mo and W. A Comparative Study of the Insertion of Carbon Dioxide Into Metal-Nitrogen and Metal-Phosphorus Bonds. W. E. Buhro, M. H. Chisholm, J. D. Martin, J. C. Huffman, K. Folting and W. E. Streib, *J. Am. Chem. Soc.*, **111**, 8149 (1989).
293. Double Bonds Between Molybdenum Atoms Supported by Dimethylamido Ligands: $Mo_2(NMe_2)_4(OR)_4$ Compounds, where R = 4-Methylcyclohexyl and Diisopropyl-methyl. M. H. Chisholm, C. E. Hammond and J. C. Huffman, *Polyhedron*, **8**, 129-131 (1989).
294. Preparation and Characterization of Mixed Amido-Phosphido Compounds of Molybdenum(IV). A Comparison of π -Donating Ligands in $Mo(NMe_2)_2(PPh_2)_2$. M. H. Chisholm, C. E. Hammond and J. C. Huffman, *Polyhedron*, **8**, 1419-1423 (1989).
295. Oxidation Addition of 1,4-Diisopropyl-1,4-diazabutadiene to Hexakisisopropoxy-dimolybdenum ($M\equiv M$). $Mo_2(OPr^i)_6(Pr^iNCHCHNPr^i)$ and $Mo_2(OPr^i)_5(Pr^iNCHCHNPr^i)_2$. M. H. Chisholm, K. Folting, J. C. Huffman and J. J. Koh, *Polyhedron*, **8**, 123-125 (1989).
296. A Diiron-Ditungsten Cluster Supported by Carbonyl and Alkoxide Ligands: $Fe_2W_2(OPr^i)_6(CO)_5S_2(py)$. M. H. Chisholm, J. C. Huffman and J. J. Koh, *Polyhedron*, **8**, 127-128 (1989).
297. An Equilibrium Involving Edge- and Face-Shared Bioctahedral $d^3\text{-}d^3$ Ditungsten Complexes: $W_2Cl_6(PEt_3)_4$ and $W_2Cl_6(PEt_3)_3$. S. T. Chacon, M. H. Chisholm, W. E. Streib and W. G. Van Der Sluys, *Inorg. Chem.*, **28**, 5-6 (1989).
298. Carbon-Carbon and Carbon-Hydrogen Bond Activation at Ditungsten Centers Supported by Alkoxide Ligands. M. H. Chisholm, *Pure and Applied Chemistry*, **61**, 1707-1714 (1989).
299. The Reductive Cross-Coupling of Ketones and Aldehydes to Olefins by Ditungsten Hexaalkoxides. M. H. Chisholm and J. A. Klang, *J. Am. Chem. Soc.*, **111**, 2324-2325 (1989).
300. The Reductive Cleavage of Carbon Monoxide by Tetranuclear Tungsten Alkoxide Clusters. M. H. Chisholm, K. Folting, M. J. Hampden-Smith and C. E. Hammond, *J. Am. Chem. Soc.*, **111**, 7283-7285 (1989).
301. Versatile Modes of Allene Bonding as Seen in the Structures of $[W_2(OtBu)_6(C_3H_4)]$, $[W_2(OtBu)_6(C_3H_4)(CO)_2]$ and $W_2(OtBu)_6(C_3H_4)_2$. R. H. Cayton, S. T. Chacon, M. H. Chisholm, M. J. Hampden-Smith, J. C. Huffman, K. Folting, P. Ellis and B. A. Huggins, *Angew. Chem. Intl. Ed. Engl.* **28**, 1523-1525 (1989) [*Angew. Chem.* **101**, 1547 (1989)].
302. Reactivity of Dinuclear and Tetranuclear Clusters of Molybdenum and Tungsten. M. H. Chisholm, in *Metal-Metal Bonds and Clusters in Chemistry and Catalysis*, J. P. Fackler, ed., Plenum Publishing Co.:New York, p. 55-74 (1990).
303. Comments on the Molecular Structure and Bonding in $[W_4Cl(O)(OiPr)_9]$ and $[W_4(O)(OiPr)_{10}]$. Analogies with Tetranuclear Carbonyl Clusters. M. H. Chisholm, K. Folting, C. E. Hammond, J. C. Huffman and J. D. Martin, *Angew. Chem. Intl. Ed. Engl.* **28**, 1368-1370 (1989) [*Angew. Chemie* **101**, 1399-1370 (1989)].

304. Reductive Cleavage of Ketonic Carbon-Oxygen Bonds in the Reactions Between Ketones and Ditungsten Hexaalkoxides. Structural Characterization of a Ditungsten μ -Propylidene Derivative. M. H. Chisholm, K. Folting and J. A. Klang, *Organometallics* **9**, 602-606 (1990).
305. Reaction Between Benzophenone and Ditungsten Hexaalkoxides. Molecular Structure and Reactivity of $W(OCH_2-t-Bu)_4(py)(\eta^2-OCPH_2)$. M. H. Chisholm, K. Folting and J. A. Klang, *Organometallics* **9**, 607-613 (1990).
306. How Do Two C-C Double Bonds Add to One M-M Triple Bond? Structure and Bonding in Bis(η^2 -ethylene)hexakis(neopentoxo)ditungsten. R. H. Cayton, S. T. Chacon, M. H. Chisholm and J. C. Huffman, *Angew. Chem. Intl. Ed. Engl.* **29**, 1026-1028 (1990) [*Angew. Chem.* **102**, 1056 (1990)].
307. A Convenient Synthesis of Trialkyl-Alkylidyne Tungsten (6+) Compounds and the Crystal and Molecular Structure of $(Me_3CCH_2)_3W\equiv CPh(py)$. M. H. Chisholm, J. C. Huffman and J. A. Klang, *Polyhedron* **9**, 1271-1276 (1990).
308. Metal Clusters, in *Encyclopedia of Science and Technology*, 7th Ed., McGraw-Hill Publishing Co.:New York, 1990.
309. Electronic Coupling Between Covalently Linked Metal-Metal Quadruple Bonds of Molybdenum and Tungsten. R. H. Cayton and M. H. Chisholm, *J. Am. Chem. Soc.* **111**, 8921-8923 (1989).
310. Kinetic Control in the Alcoholysis Reaction Involving Hexakis-dimethyl-amidodialuminum and tert-Butanol. Preparation, Crystal and Molecular Structures of $Al(OBu^t)_3(HNMe_2)$ and $Al_2(NMe_2)(OBu^t)_5$. M. H. Chisholm, V. F. DiStasi and W. E. Streib, *Polyhedron* **9**, 253-255 (1990).
311. Dinuclear and Polynuclear Complexes. M. H. Chisholm, *Yearbook of Science and Technology*, McGraw-Hill Publishing Co., pp. 77-80 (1991).
312. 12-Electron Tetranuclear Tungsten Alkoxide Clusters Are Not Tetrahedral. Preparation, Structure and Bonding in $W_4(O)(OPr^i)_{10}$ and $W_4(O)(Cl)(OPr^i)_9$. Comparisons with the Bonding in Carbonyl Clusters. M. H. Chisholm, C. E. Hammond, J. C. Huffman and J. D. Martin, *Polyhedron* **9**, 1829-1841 (1990).
313. Triple Bonds Between Molybdenum and Tungsten Atoms Supported by Selenolate Ligands: $M_2(SeAr')_6$ and $M_2(OPr^i)_2(SeAr')_4$, where $Ar' =$ Mesityl. M. H. Chisholm, I. P. Parkin, J. C. Huffman and W. E. Streib, *J. Chem. Soc., Chem. Comm.* 920-921 (1990).
314. Facile Synthesis and Structural Principles of the Strontium Phenoxide $Sr_4(OPh)_8(PhOH)_2(THF)_6$. S. R. Drake, W. E. Streib, M. H. Chisholm and K. G. Caulton, *Inorg. Chem.* **29**, 2707 (1990).
315. The Coordination Chemistry of Dinuclear Molybdenum(III) and Tungsten(III): d^3-d^3 Dimers. M. H. Chisholm, *Accounts Chem. Res.* **23**, 419-425 (1990).
316. A Tricarbonyl, Tetranuclear Tungsten Cluster Supported by Alkoxide Ligands: $W_4(OCH_2Pr^i)_{12}(\eta^2, \mu_4-CO)(CO)_2$. M. H. Chisholm, K. Folting, V. J. Johnston and C. E. Hammond, *J. Organometallic Chem.* **394**, 265-274 (1990).
317. Synthesis and Structural Characterization of the First Examples of Molecular Aggregates of Barium Supported by Aryloxy and Alkoxide Ligands: $HBa_5(O)(OPh)_9(THF)_8$ and $H_3Ba_6(O)(OBu^t)_{11}(OC(Et)_2CH_2O(THF)_3)$. K. G. Caulton, M. H. Chisholm, S. R. Drake and K. Folting, *J. Chem. Soc., Chem. Comm.*, 1349-1351 (1990) (F. G. A. Stone Honor Issue).
318. Multiple Bonds Between Metal Atoms in Ordered Assemblies: Liquid Crystals Containing Quadruple Bonds Between Molybdenum Atoms. R. H. Cayton, M. H. Chisholm and F. D. Darrington, *Angew. Chem. Intl. Ed. Engl.* **29**, 1481-1483 (1990).
319. Structural Characterization of a Tetranuclear Tungsten Carbide Cluster Formed by the Reductive Cleavage of Carbon Monoxide: $W_4(\mu_4-C)(OCH_2-c-C_5H_9)_{14}$. M. H. Chisholm, C. E. Hammond, J. C. Huffman and V. J. Johnston, *J. Organomet. Chem.* **394**, C16-C20 (1990) (F. G. A. Stone Honor Issue).
320. Preparation, Crystal and Molecular Structure of a Hydrocarbon Soluble, Volatile Oxo-Alkoxide of Barium: $H_4Ba_6(\mu_6-O)(OCH_2CH_2OCH_3)_{14}$. K. G. Caulton, M. H. Chisholm, S. R. Drake and J. C. Huffman, *J. Chem. Soc., Chem. Comm.* 1498-1499 (1990).
321. Preparation and Characterization of $M_2(SeAr')_6$ and Mixed Ligand $M_2(OR)_2(SeAr')_4$ Species (M = Mo, W). M. H. Chisholm, J. C. Huffman, I. P. Parkin and W. E. Streib, *Polyhedron* **9**, 2941-2952 (1990).

322. Organometallic Chemistry of d^3 - d^3 Dimolybdenum and Ditungsten. M. H. Chisholm, 400th Volume of *J. Organomet. Chem.* **400**, 235 (1990) [Invited Review Article].
323. Synthesis and Structure of a Trinuclear Barium Siloxide Containing Low Coordinate Barium Ions: $[\text{Ba}_3(\text{OSiPh}_3)_6(\text{THF})] \cdot 0.5\text{THF}$. K. G. Caulton, M. H. Chisholm, S. R. Drake and W. E. Streib, *Angew. Chem. Intl. Ed. Engl.* **29**, 1483-1485 (1990).
324. Dimolybdenum and Ditungsten Derivatives of the Trisilanol H_3T_7 [$\text{H}_3\text{T}_7 = (\text{c-C}_6\text{H}_{11})_7\text{Si}_7\text{O}_9(\text{OH})_3$]: $\text{Mo}_2(\text{T}_7)_2(\text{M}\equiv\text{M})$ and $\text{W}_2(\mu\text{-H})(\text{O-t-Bu})(\text{T}_7)_2$. T. A. Budzichowski, S. T. Chacon, M. H. Chisholm, F. J. Feher and W. E. Streib, *J. Am. Chem. Soc.* **113**, 689-691 (1991).
325. Comments on the Substitutional Lability of the Dimetal Carboxylates of Molybdenum and Rhodium. Effects of M-M MO Configuration. J. M. Casas, R. H. Cayton and M. H. Chisholm, *Inorg. Chem.* **30**, 358-360 (1991).
326. Cycloalkyne Ligands Formed by the Coupling of Polymethylene Bridged Alkylidyne: $\text{L}_n\text{M-C}(\text{CH}_2)_n\text{C-ML}_n \rightarrow \text{L}_{2n}\text{M}_2\text{C}_2(\text{CH}_2)_n$. M. H. Chisholm, K. Folting, J. C. Huffman and E. A. Lucas, *Organometallics* **10**, 535-537 (1991).
327. Synthesis and X-Ray Crystal Structures of the One-Dimensional Ribbon Chains $[\text{MOBu}^t\text{Bu}^t\text{OH}]_4$, and the Cubane Species $[\text{MOBu}^t]_4$ (M = K and Rb). M. H. Chisholm, S. R. Drake, A. A. Naiini and W. E. Streib, *Polyhedron* **10**, 337-345 (1991).
328. The Synthesis and Characterization of Volatile Lithium Alkoxides, and the Single Crystal X-Ray Structure of $[\text{LiOCMe}_2\text{Ph}]_6$. M. H. Chisholm, S. R. Drake, A. A. Naiini and W. E. Streib, *Polyhedron* **10**, 805-810 (1991).
329. Are Internal Flips of M-M Multiple Bonds Within Cubic or Octahedral Ligand Fields Symmetry Allowed? R. H. Cayton and M. H. Chisholm, *Inorg. Chem.* **30**, 1422-1425 (1991).
330. Crystal and Molecular Structure of $\text{Al}_2(\text{O-t-Bu})_6$. Comments on the Extent of M-O π -Bonding in Group 6 and Group 13 Alkoxides. R. H. Cayton, M. H. Chisholm, E. R. Davidson, V. F. DiStasi, Ping Du and J. C. Huffman, *Inorg. Chem.* **30**, 1020-1024 (1991).
331. Hexakis(tert-butyl dimethylsilyloxy)ditungsten (M \equiv M) and Its Reaction with Ethyne. Hydrogen Atom Transfer Reactions Involving Bridging Ethynyl, Ethyne, Vinyl and Ethylidyne Ligands. M. H. Chisholm, Cindy Cook, J. C. Huffman and W. E. Streib, *J. Chem. Soc., Dalton Trans.*, 929-937 (1991) [150 Year Celebration Issue of *Chem. Soc.*].
332. Developing the Reactivity of Multiple Bonds Between Metals Atoms: Inorganic Functional Groups. M. H. Chisholm, *Pure and Applied Chemistry* **63**, 665-680 (1991) [Invited Review based on Plenary Lecture at ICCM Meeting, Gera, Germany].
333. The Synthesis and Molecular Structure of a Mononuclear Barium Aryloxide-Ethanolamine Complex, $\text{Ba}(2,6\text{-Bu}_2\text{C}_6\text{H}_3\text{O})_2(\text{HOCH}_2\text{CH}_2\text{NMe}_2)_4 \cdot 2\text{C}_7\text{H}_8$, Exhibiting Extensive Hydrogen Bonding. K. G. Caulton, M. H. Chisholm, S. R. Drake and K. Folting, *Inorg. Chem.* **30**, 1500-1503 (1991).
334. Synthesis, Crystal and Molecular Structure of $[\text{Me}_2\text{NH}_2]^+[\text{Al}(\text{OSiMe}_3)_4]^-$ and $\text{Al}_2(\text{OSiMe}_3)_6$. M. H. Chisholm, J. C. Huffman and J. L. Wesemann, *Polyhedron* **10**, 1367-1372 (1991).
335. $\text{M}_2(\text{OR})_6$ Compounds (M = Al, Mo and W; R = t-Bu and cy-Hex) as Single Source Precursors. Studies of Thermolysis Under He Flow. D. V. Baxter, M. H. Chisholm, V. F. DiStasi and J. A. Klang, *Chem. Mater.* **3**, 221-222 (1991).
336. The Synthesis, Characterization and X-Ray Structure of Anti- $\text{W}_2(\text{NMe}_2)_4(\text{GePh}_3)_2$. M. H. Chisholm, I. P. Parkin and J. C. Huffman, *Polyhedron Symposium-in-Print* **10**, 1215-1219 (1991).
337. Low Pressure Chemical Vapor Deposition of Tungsten Carbide (WC) Thin Films. Z. Xue, K. G. Caulton and M. H. Chisholm, *Chem. Mater.* **3**, 384-386 (1991).
338. Direct Observation of α -Hydrogen Transfer from Alkyl to Alkylidyne Ligands in $(\text{Me}_3\text{CCH}_2)_3\text{W}\equiv\text{CSiMe}_3$. Kinetic and Mechanistic Studies of Alkyl-Alkylidyne Exchange. K. G. Caulton, M. H. Chisholm, W. E. Streib and Z. Xue, *J. Am. Chem. Soc.* **113**, 6082-6090 (1991).
339. Imino-Ether Complexes of Platinum: $\text{cis-PtCl}_2(\text{NH}=\text{C}(\text{OR})\text{Me})_2$ and $\text{PtCl}_4(\text{NH}=\text{C}(\text{OR})\text{-Me}_2)_2$, where R = Me, Et and Pr^t. Preparation, Characterization and X-Ray Structure of $[\text{PtCl}_2(\text{NH}=\text{C}(\text{OPr}^t)\text{Me})_2]_2$. J. M. Casas, M. H. Chisholm, M. V. Sicilia and W. E. Streib, *Polyhedron* **10**, 1573-1578 (1991).

340. The Tungsten-Tungsten Triple Bond. Part 17. Mixed Amido-Phosphido Compounds of Formula $M_2(PR_2)_2(NMe_2)_4$. Comparisons of Amido and Phosphido Ligation and Bridged and Unbridged Isomers. W. E. Buhro, M. H. Chisholm, J. D. Martin, K. Folting, J. C. Huffman and W. E. Streib, *J. Am. Chem. Soc.* **114**, 557-570 (1992).
341. Cyclopentoxyditungsten Compounds and Crystal, Molecular Structure and Dynamic Solution Behavior of $W_2(\mu-H)(O-c-C_3H_9)_7(HNMe_2)$. S. T. Chacon, M. H. Chisholm, K. Folting, M. J. Hampden-Smith and J. C. Huffman, *Inorg. Chem.*, **30**, 3122-3125 (1991).
342. Mo-Mo Quadruple Bonds Bridged by 1,8-Naphthyridinyl-2,7-Dioxide: An Insight Into the Nature of a Parallel-Linked Stiff-Chain Polymer: $[\sim(M-4-M)\sim\sim(M-4-M)\sim]_x$. R. H. Cayton, M. H. Chisholm, J. C. Huffman and E. B. Lobkovsky, *Angew. Chem. Intl. Ed. Engl.* **30**, 862-864 (1991).
343. Reduction of α , β Unsaturated Ketones and Aldehydes by Tungsten-Tungsten Triple Bonds: Formation of 1,2- and 1,4 Adducts as Opposed to C=O Cleavage. M. H. Chisholm, E. A. Lucas, A. C. Sousa and J. C. Huffman, *J. Chem. Soc., Chem. Commun.*, 847-849 (1991).
344. Mixed Alkoxide-Anilide d^3-d^3 Dimers of Molybdenum and Tungsten. The X-Ray Crystal Structures of $M_2(OBu^t)_4(HNPh)_2(H_2NPh)_2$ (M = Mo, W). M. H. Chisholm, I. P. Parkin, W. E. Streib and K. S. Folting, *Polyhedron*, **10**, 2309-2316 (1991).
345. Oxygen Atom Transfer in the Reaction Between Hexakis-(dimethyl-tert-butyloxy)ditungsten and Nitric Oxide. A Remarkable Difference in the Reactivity of the Tungsten-Tungsten Triple Bonds as a Function of the Attendant Ligands: t-BuO versus $Me_2(t-Bu)SiO$. M. H. Chisholm, C. M. Cook and W. E. Streib, *Inorganica Chim. Acta* **198-200**, 63-77 (1992) [Invited Article for Special Issue on Dinuclear Chemistry].
346. The Preparation and Characterization of $M_2(OCPh_3)_2(NMe_2)_4$. The X-Ray Crystal structures of Gauche- $W_2(OCPh_3)_2(NMe_2)_4$, Anti- $Mo_2(OCPh_3)_2(NMe_2)_4$ and Anti- $W_2(OSiPh_3)_2(NMe_2)_4$. M. H. Chisholm, I. P. Parkin, J. C. Huffman, E. M. Lobkovsky and K. Folting, *Polyhedron*, **10**, 2839-2846 (1991).
347. Allene Adducts of Ditungsten Hexaalkoxides. Three Modes of Allene Coordination to Dinuclear Centers as Seen in the Structures of $W_2(O-t-Bu)_6(C_3H_4)$, $W_2(O-t-Bu)_6(C_3H_4)_2$ and $W_2(O-t-Bu)_6(C_3H_4)(CO)_2$. S. T. Chacon, M. H. Chisholm, K. Folting, J. C. Huffman, and M. J. Hampden-Smith, *Organometallics*, **10**, 3722-3735 (1991).
348. Dinuclear Barium Alkoxides and Siloxides Displaying Variable Coordination Numbers and Asymmetric Dispositions of Ligands. S. R. Drake, W. E. Streib, K. Folting, M. H. Chisholm and K. C. Caulton, *Inorg. Chem.* **31**, 3205-3210 (1992).
349. Metal-Metal Multiple Bonds in Ordered Assemblies. I. Tetranuclear Molybdenum and Tungsten Carboxylates Involving Covalently Linked M-M Quadruple Bonds. Molecular Models for Subunits of One-Dimensional Stiff-Chain Polymers. R. H. Cayton, M. H. Chisholm, J. C. Huffman and E. B. Lobkovsky, *J. Am. Chem. Soc.*, **113**, 8709-8724 (1991).
350. Hexakis(dimethylamido)ditungsten and Tungsten(IV) Chloride. M. H. Chisholm and J. D. Martin, *Inorg. Syn.* **29**, 137-140 (1992).
351. Metalla-enes and Metalla-yenes. From Small Molecules to Infinite Polymers. M. H. Chisholm, *Angew. Chem. Intl. Ed. Engl. Highlights* **30**, 673-674 (1991) (*Angew. Chem. Highlights* **103**, 690 (1991)).
352. Addition of 1,3-Butadiene to a Metal-Metal Triple Bond. Preparation and Structure of $W_2(OCH_2-t-Bu)_6(py)(C_4H_6)$. M. H. Chisholm, J. C. Huffman, E. A. Lucas and E. B. Lubkovsky, *Organometallics* **10**, 3424-3425 (1991).
353. Structure and Bonding of $(\mu-Dicarbido)hexa-tert-butoxyditungsten$, $(t-BuO)_3W\equiv C-C\equiv W(O-t-Bu)_3$. K. G. Caulton, R. H. Cayton, M. H. Chisholm, J. C. Huffman, E. B. Lubkovsky and Z. Xue, *Organometallics* **11**, 321-326 (1992).
354. The Tungsten-Tungsten Triple Bond. 18. Bridging and Terminal Allyl Ligands in Complexes of Formula $W_2(R)_2(NMe_2)_4$, where R = C_3H_7 and C_4H_7 . R. H. Cayton, M. H. Chisholm, M. J. Hampden-Smith, J. C. Huffman and K. G. Moodley, *Polyhedron* **11**, 3197-3210 (1992).

355. Diolates of Dimolybdenum and Ditungsten ($M\equiv M$) with Seven, Eight and Nine Membered Rings. M. H. Chisholm, I. P. Parkin, K. Folting, E. B. Lubkovsky and W. E. Streib, *J. Chem. Soc., Chem. Commun.*, 1673-1675 (1991).
356. On the Nature of the Olefination Reaction Involving Ditungsten Hexaalkoxides and Aldehydes or Ketones. M. H. Chisholm, J. C. Huffman, E. A. Lucas, A. Sousa and W. E. Streib, *J. Am. Chem. Soc.* **114**, 2710-2712 (1992).
357. $Mo_2(\beta\text{-diketonates})_4$. Preparations, Properties and Solid-State and Molecular Structure of Tetrakis(2,2,6,6-tetramethyl-3,5-hepta-dionato)dimolybdenum. M. H. Chisholm, K. Folting and E. F. Putilina, *Inorg. Chem.* **31**, 1510-1513 (1992).
358. Attempted Preparation of a Dimetallabenzene. Preparation and Crystal Structure of $W_2(\mu\text{-}C_3Ph_3)(\mu\text{-}CPh)(NMe_2)_4(M\text{-}M)$. M. H. Chisholm, R.-M. Jansen and J. C. Huffman, *Organometallics* **11**, 2305-2307 (1992).
359. A New Structural Type for an Electron-Precise, Six-Electron Triangular Metal Cluster: $W_3O_2(O\text{-}t\text{-}Bu)_8$. M. H. Chisholm, C. M. Cook and K. Folting, *J. Am. Chem. Soc.* **114**, 2721-2722 (1992).
360. $W_6(H)_5(O\text{-}i\text{-}Pr)_{13}$. A Polynuclear-Polyhydride Supported Exclusively by Alkoxide Ligands. M. H. Chisholm, K. S. Kramer and W. E. Streib, *J. Am. Chem. Soc.* **114**, 3571-3573 (1992); *correction*, *J. Am. Chem. Soc.* **117**, 6152 (1995) [The compound is shown to be $W_6(H)_5(C\text{-}i\text{-}Pr)(O\text{-}i\text{-}Pr)_{12}$. See also publication 454].
361. New Routes to Alkylidyne Bridged Ditungsten Compounds Supported by Alkoxide or Siloxide Ligands by the Activation of Ethylene. S. T. Chacon, M. H. Chisholm, C. M. Cook, M. J. Hampden-Smith and W. E. Streib, *Angew. Chem. Intl. Ed. Engl.* **31**, 462-464 (1992) [*Angew. Chem.* **104**, 467 (1992)].
362. Synthesis and Substitution Reactions of Dinuclear Molybdenum Complexes Containing Mo-Mo Quadruple Bonds and Labile Solvent Ligands. R. H. Cayton, M. H. Chisholm, E. F. Putilina, K. Folting, J. C. Huffman and K. G. Moodley, *Inorg. Chem.* **31**, 2928-2934 (1992).
363. Metal Alkoxides - Models for Metal Oxides. Part 17. The Reductive Cleavage of Carbon Monoxide to Carbide and Oxide by Ditungsten and Tetratungsten Alkoxides. Crystal and Molecular Structures of $W_4(\mu_4\text{-}C)(OCH_2\text{-}c\text{-}Pen)_{14}$, $W_4(\mu_4\text{-}C)(O)(OCH_2\text{-}t\text{-}Bu)_{12}$ and $W_4(\mu_4\text{-}C)(O)(O\text{-}i\text{-}Pr)_{12}$. M. H. Chisholm, C. E. Hammond, V. J. Johnston, W. E. Streib and J. C. Huffman, *J. Am. Chem. Soc.* **114**, 7056-7065 (1992).
364. Tungsten-Containing Polyhedral Oligosilasesquioxanes: Synthesis, Structure and Reactivity of $(c\text{-}C_6H_{11})_7Si_7O_9(O_3W[NMe_2]_3)$. T. A. Budzichowski, M. H. Chisholm, F. J. Feher and J. W. Ziller, *Polyhedron* **11**, 1575-1579 (1992).
365. Synthesis, Structure and Bonding of $CpCoW_2(OCH_2Bu^t)_6$ and Comments on the Combining Properties of CO and CpCo. M. H. Chisholm, V. J. Johnston, O. Eisenstein and W. E. Streib, *Angew. Chem. Intl. Ed. Engl.* **31**, 896-898 (1992) [*Angew. Chem.* **104**, 889 (1992)].
366. Reaction of the 12-Electron Alkoxide Supported Tungsten Clusters, $W_4(OR)_{12}$, where R = $CH_2\text{-}i\text{-}Pr$ and $CH_2\text{-}i\text{-}Pr$ and $CH_2\text{-}c\text{-}Pen$, with Isocyanides, Nitriles, Nitric Oxide and Alkynes. Comparison with the Reactivity of $W_2(OR)_6$ Compounds. M. H. Chisholm, V. J. Johnston and W. E. Streib, *Inorg. Chem.* **31**, 4081-4083 (1992).
367. The Tungsten-Tungsten Triple Bond. 19. Preparation and Characterization of W_2^{6+} -Containing Compounds Supported by Amide/Alkoxide and Trifluoromethanesulfonate Ligands. M. H. Chisholm, K. S. Kramer, J. D. Martin, J. C. Huffman, E. B. Lobkovsky and W. E. Streib, *Inorg. Chem.* **31**, 4469-4474 (1992).
368. Chemical Vapor Deposition of Cubic-Zirconia Thin Films from Zirconium Alkoxide Complexes. Z. Xue, B. A. Vaartstra, K. G. Caulton, M. H. Chisholm and D. L. Jones, *Europ. J. Solid-State Inorg. Chem.* **29**, 213-225 (1992).

369. Structure, Bonding and Dynamic Behavior of Bis(η^2 -ethylene)hexakis(neopentoxo)ditungsten. Studies of the Reversible Addition of C-C Double Bonds to a W-W Triple Bond. S. T. Chacon, M. H. Chisholm, O. Eisenstein and J. C. Huffman, *J. Am. Chem. Soc.* **114**, 8497-8509 (1992).
370. Direct Observation of Ligand Migration in the Reversible Addition of Trimethylphosphine to 1,2-Mo₂(CH₂Ph)₂(O-i-Pr)₄ and Structural Characterization of (PMe₃)(PhCH₂)₂(i-PrO)Mo≡Mo(O-i-Pr)₃ and 1,2-Mo₂(CH₂Ph)₂(O-i-Pr)₄(dmpm), where dmpm = Bis(dimethylphosphino)methane. M. H. Chisholm, K. Folting, J. C. Huffman, K. S. Kramer and R. J. Tatz, *Organometallics* **11**, 4029-4036 (1992).
371. Two New Structural Types for d³-d³ Tungsten Dimers: [K(18-crown-6)]⁺[Mo₂(OCH₂-t-Bu)₇]⁻ and W₂(P(c-hexyl)₂)₃(OCH₂-t-Bu)₃(HP(c-hexyl)₂). T. A. Budzichowski, M. H. Chisholm, J. D. Martin, J. C. Huffman, K. G. Moodley and W. E. Streib, *Polyhedron* **12**, 343-345 (1993).
372. Synthesis and Crystal and Molecular Structure of Mo₄O(OCH₂Bu¹)₁₀(py). A 12-Electron Butterfly Cluster. M. H. Chisholm, Y. Yang, E. Lobkovsky and J. C. Huffman, *J. Cluster Science* **3**, 151-164 (1992).
373. Oxygen Atom Abstraction from Allylic Alcohols and Conjugated Alkenyloxides. Y. Yang and M. H. Chisholm, *Polyhedron* **11**, 2813-2815 (1992).
374. The Dimolybdenum Pentapivalate Anion: Structure and Dynamic Solution Behavior and Comments on the Substitutional Lability of M-4-M Containing Compounds. R. H. Cayton, S. T. Chacon, M. H. Chisholm and K. Folting, *Polyhedron* **12**, 415-422 (1993).
375. A Tetranuclear Tungsten Carbido Alkoxide Cluster with a Hydride Ligand: W₄(μ -C)(NMe)(OCH₂Bu¹)₁₁(H). M. H. Chisholm, V. J. Johnston, J. D. Martin, E. Lobkovsky and J. C. Huffman, *J. Cluster Sci.* **4**, 105-117 (1993).
376. The Carbon-Carbon Coupling of μ -Ethyne and Isonitrile Ligands at a Ditungsten Center. Preparation and Structure of W₂(μ -CCCNHXyl)(OSiMe₂Bu¹)₅(CNXyl)₄, where Xyl = 2,6-Me₂C₆H₃. M. H. Chisholm, C. Cook, J. C. Huffman and J. D. Martin, *Organometallics* **12**, 2354-2359 (1993).
377. Interconverting Edge-Sharing and Face-Sharing Bioctahedral Dinuclear Tungsten(III) Complexes. Preparation, Properties and Structures of W₂Cl₆L₄, where L = PMe₃, PEt₃ and P(n-Bu)₃, and W₂Cl₆L₃, where L = PEt₃ and P(n-Bu)₃, and [HPEt₃]⁺[W₂Cl₇(PEt₃)₂]⁻. J. T. Barry, S. T. Chacon, M. H. Chisholm, V. F. DiStasi, J. C. Huffman, W. E. Streib and W. G. Van Der Sluys, *Inorg. Chem.* **32**, 2322-2331 (1993).
378. Ene-Yne Couplings at a Ditungsten Center to Give Alkylidyne Hydrido Complexes Supported by Siloxide Ligands. M. H. Chisholm, C. M. Cook, J. C. Huffman and W. E. Streib, *Organometallics* **12**, 2677-2685 (1993).
379. Mesomorphic Metalloorganic Compounds. Perspectives and Prospects. M. H. Chisholm and E. F. Putilina, *Ciencia Hoje* **18**, 32-37 (1994).
380. Synthesis and Characterization of M₂(EPh₃)₂(NMe₂)₄ Compounds (E = C, Si, Ge, Sn; M = Mo, W). M. H. Chisholm, G. J. Gama and I. P. Parkin, *Polyhedron* **12**, 961-965 (1993).
381. [K(18-crown-6)]⁺[Mo₄(μ_4 -H)(OCH₂tBu)₁₂]⁻. Preparation and Structural Characterization of the First Hydrido Alkoxide Cluster of Molybdenum and a Rare, if not First, Example of a μ_4 -Hydride. T. A. Budzichowski, M. H. Chisholm, J. C. Huffman and O. Eisenstein, *Angew. Chem. Intl. Ed. Engl.* **33**, 191-193 (1994).
382. [Et₃PH][W₄O₃Cl₇(PEt₃)₃]. A 12-Electron Tetrahedral Tungsten Cluster with an Interesting Arrangement of Ligands. J. T. Barry, S. T. Chacon, M. H. Chisholm, K. Folting and J. D. Martin, *J. Cluster Sci.* **4**, 259-269 (1993).
383. Alkoxides, Aryloxides, Trialkylsiloxides and Related Oxygen Donors as Ancillary Ligands in the Organometallic Chemistry of the Early Transition Metals. M. H. Chisholm, *Chemtracts* **4**, 273-301 (1992) [Invited Review - published in 1993].
384. Quadruple Bonds Between Molybdenum Atoms Supported by Alkoxides Ligands. M. H. Chisholm, K. Folting, J. C. Huffman, E. F. Putilina, W. E. Streib and R. J. Tatz, *Inorg. Chem.* **32**, 3771-3780 (1993).

385. Triple Bonds Between Tungsten Atoms with Ancillary Dimesitylboroalkoxide Ligands. Preparations, Properties and Structures of $W_2(NMe_2)_4[OB(Mes)_2]_2$ and $W_2(OBu^t)_4[OB(Mes)_2]_2$. M. H. Chisholm, K. Folting, S. T. Haubrich and J. D. Martin, *Inorg. Chimica Acta* **213**, 17-24 (1993).
386. P_x Ligands with a Maximum of Electron-Donating Ability. VI. $[CoCp''(\eta^4-P_4)\{Cr(CO)_5\}_3]Cp'' = \eta^5-C_5H_3^1Bu_2-1,3)$, the Product of the Reaction Between P_4 and $[CoCp''(\mu-CO)]_2$ in the Presence of $[Cr(CO)_5THF]$. M. Scheer, U. Becker, J. C. Huffman and M. H. Chisholm, *J. Organomet. Chem.* **461**, C1-C3 (1993).
387. Cationic d^3-d^3 Dinuclear Compounds of Tungsten: $[W_2(O_2CBu^t)_5]^+X^-$, where $X^- = BF_4^-$ and $CF_3SO_3^-$. T. A. Budzichowski, M. H. Chisholm, J. C. Huffman, K. S. Kramer and M. G. Fromhold, *Inorg. Chimica Acta* **213**, 141-146 (1993).
388. Studies of Mono Substituted Compounds of Formula $M_2(NMe_2)_5X(M \equiv M)$, where $M = Mo$ and W and $X = I$, Alkyl, Aryl, and Diphenylphosphido and the Bridged-1,1'-Ferrocenyl Complex $W_2(NMe_2)_4(\mu-(C_5H_4)_2Fe)$. H. Schulz, K. Folting, J. C. Huffman, W. E. Streib and M. H. Chisholm, *Inorg. Chem.* **32**, 6056-6066 (1993).
389. Covalently Linked Molybdenum-Molybdenum Quadruple Bonds. Dioxy-pyridazine, Dianion and 2-Imidazolinethionate as Bridges Between Dimolybdenum Fragments. R. H. Cayton, M. H. Chisholm, E. F. Putilina and K. Folting, *Polyhedron* **12**, 2627-2633 (1993).
390. $HB(3,5-Me_2pyrazolate)_3^-$ as an Encapsulating Ligand for Ba(II). S. Dutremez, D. B. Leslie, W. E. Streib, M. H. Chisholm and K. G. Caulton, *J. Organomet. Chem.* **462**, C1 (1993) [Honor Issue for M. F. Lappert].
391. Two Isomers of $WCl_3(PMe_2Ph)_3$ and Their Potential for Equilibration with $W_2Cl_6(PMe_2Ph)_n$. H. Rothfuss, J. T. Barry, J. C. Huffman, K. G. Caulton and M. H. Chisholm, *Inorg. Chem.* **32**, 4573-4577 (1993).
392. Direct Observation of the Conversion of a Tertiary Butoxide Ligand to Hydrido-Oxo Ligands with the Liberation of Isobutylene at a Ditungsten Center. T. A. Budzichowski, M. H. Chisholm and W. E. Streib, *J. Am. Chem. Soc.* **116**, 389-390 (1994).
393. $Mo_4(H)_3(O-t-Bu)_7(HNMe_2)$: A Novel Hydrido Cluster of Molybdenum. M. H. Chisholm, J. C. Huffman, K. S. Kramer and W. E. Streib, *J. Am. Chem. Soc.* **115**, 9866-9867 (1993).
394. Triangular Phenoxide Aggregates of Calcium, Strontium and Barium: A Comparison. K. G. Caulton, M. H. Chisholm, S. R. Drake, K. Folting, J. C. Huffman and W. E. Streib, *Inorg. Chem.*, **32**, 1970-1976 (1993).
395. Synthesis and Structural Characterization of the Alkaline Earth Aryloxides Aggregates $H_2Ba_8(\mu_5-O)_2(OPh)_{14}(HMPA)_6$ and $H_2Sr_6Ba_2(\mu_5-O)_2(OPh)_{14}(HMPA)_6$. A New Structural Type Displaying Metal Ion Site Selectivity. K. G. Caulton, M. H. Chisholm, S. R. Drake, K. Folting and J. C. Huffman, *Inorg. Chem.* **32**, 816-820 (1993).
396. Stepwise Activation of σ -Thiophenyl Ligands at Ditungsten Centers. M. H. Chisholm, S. T. Haubrich, J. D. Martin and W. E. Streib, *J. Chem. Soc., Chem. Commun.* 683-684 (1994).
397. Multiple Bonds Between Metal Atoms in Ordered Assemblies. II. Quadruple Bonds in the Mesomorphic State. D. V. Baxter, R. H. Cayton, M. H. Chisholm, J. C. Huffman, E. F. Putilina, S. L. Tagg, J. L. Wesemann and J. W. Zwanziger, *J. Am. Chem. Soc.* **116**, 4551-4566 (1994).
398. Metal Complexes Containing Metal-Metal Multiple Bonds. M. H. Chisholm, *Yearbook of Science and Technology*, McGraw-Hill (1994)
399. Alkoxide Clusters of Molybdenum and Tungsten. M. H. Chisholm, in *Early Transition Metal Clusters with π -Donor Ligands, The Chemistry of Metal Cluster Complexes*, D. R. Shriver, H. D. Kaesz, and R. D. Adams, Series Eds., VCH Publishers, New York, 1995.
400. Early Transition Metal Clusters with π -Donor Ligands. M. H. Chisholm, Ed., VCH Publishers, New York, (1995).
401. Tungsten(6+) Trispinacolate: Structure and Comments on the Preference for an Octahedral Geometry Relative to the Trigonal Prismatic (D_{3h}) for a d^0 Complex in the Presence of Strong π -Donor Ligands. M. H. Chisholm, I. P. Parkin, W. E. Streib and O. Eisenstein, *Inorg. Chem.* **33**, 812-815 (1994).

402. Attempts to Prepare $W_2(\beta\text{-Diketonate})_4(\text{M-4-M})$ Complexes by Reductive Elimination from $d^3\text{-}d^3$ Ditungsten Complexes. Preparation and Structures of $W_2R_2(\text{NMe}_2)_2(\text{Bu}^t\text{-acac})_2$ and $W_2R_2(\text{OPr}^i)_2(\text{Bu}^t\text{-acac})_2$ Compounds, where $R = \text{Et, Ph, CH}_2\text{Ph}$ and Bu . M. H. Chisholm, E. F. Putilina, K. Folting and W. E. Streib, *J. Cluster Sci.*, **5**, 67-82 (1994) [Invited Article for Special Issue to Commemorate the 30th year of the M-M Quadruple Bonds].
403. Chemical Routes to Advanced Materials. *Polyhedron Symposium-in-Print*, M. H. Chisholm and M. J. Hampden-Smith, Eds., **13**, No. 8 (1994).
404. Coordination Chemistry of Complexes with Metal-Metal Multiple Bonds: Reversible Coordination of Cyanide by Dimolybdenum and Ditungsten Hexaalkoxides. T. A. Budzichowski and M. H. Chisholm, *Polyhedron* **13**, 2035-2042 (1994).
405. Dicarbonyl and Tricarbonyl Adducts of $(W\equiv W)^{6+}$ Containing Complexes. Preparation and Structures of $W_2(\text{CO})_2(\text{OCMe}_2\text{CF}_3)_6$ and $W_2(\text{CO})_3(\text{NMe}_2)_2(\text{OCMe}(\text{CF}_3)_2)_4$. T. A. Budzichowski, M. H. Chisholm, D. B. Tiedtke, J. C. Huffman and W. E. Streib, *Organometallics* **14**, 2318-2324 (1995).
406. Solid-State and Solution Structure of $[\{\text{NW}(\text{OC}(\text{CH}_3)_2\text{CF}_3)_3\}]_3$ and Factors Favoring the Metathesis of C-N and W-W Triple Bonds in Reactions Involving Organic Nitriles and Ditungsten Hexaalkoxides. M. H. Chisholm, K. Folting, D. B. Tiedtke, F. Lemoigno and O. Eisenstein. *Angew. Chem. Intl. Ed. Engl.* **34**, 110-112 (1995) [*Angew. Chem.* **107**, 61-63 (1995)].
407. Molecular Routes for the Synthesis of Metal-Carbides, -Nitrides and -Oxides. 1. Studies of the Thermal Decomposition of $M_2(\text{OR})_6$ and $M_2(\text{CH}_2\text{Ph})_2(\text{OR})_4$ Compounds, where $M = \text{Mo}$ and W . D. V. Baxter, M. H. Chisholm, V. F. DiStasi and S. T. Haubrich, *Chem. Mater.* **7**, 84-92 (1995).
408. Polynuclear Metal Hydrido Alkoxides. Reactions of $W_4(\text{H})_2(\text{O-i-Pr})_{14}$ and $W_2(\text{H})(\text{O-c-C}_5\text{H}_9)_7(\text{HNMe}_2)$ with Carbon-Carbon, Carbon-Oxygen and Carbon-Nitrogen Multiple Bonds. J. T. Barry, S. T. Chacon, M. H. Chisholm, J. C. Huffman and W. E. Streib, *J. Am. Chem. Soc.* **117**, 1974-1990 (1995).
409. Substrate Uptake and Activation by Dimolybdenum and Ditungsten Hexaalkoxides. Factors Influencing the Cleavage of the C-X Multiple Bonds as Deduced from Studies of the Reactions Between $[\text{Mo}_2(\text{OR})_6]$, where $R = ^t\text{Bu}$ and CH_2^tBu , and Diarylthiones, $\text{Ar}_2\text{C}=\text{S}$, N,N-Diethylcyanamide, $\text{Et}_2\text{NC}\equiv\text{N}$ and tri-n-Butylphosphine. T. A. Budzichowski, M. H. Chisholm and K. Folting, *Chemistry - A European Journal*, **2**, 110-117 (1996).
410. Further Studies of the Reactions Involving Ethyne and $M_2(\text{O-}t\text{-Bu})_6$, where $M = \text{Mo}$ and W . Polyacetylene Formation versus Formation of Ethyne Adducts and C-C Coupled Products. M. H. Chisholm, D. M. Hoffman, J. McCandless Northius and J. C. Huffman, *Polyhedron* **16**, 839-847 (1997).
411. $[\text{W}_4(\text{O})_2(\text{O-i-Pr})_8]_2$. An Unusual Octanuclear Oxo-Alkoxide Cluster of Tungsten. M. H. Chisholm, K. S. Kramer and W. E. Streib, *J. Cluster Sci.*, **6**, 135-145 (1995).
412. The Tungsten-Tungsten Triple Bond. 20. Synthesis and Characterization of Cyclooctatetraenyltetradimethylamidoditungsten. R. H. Cayton, S. T. Chacon, M. H. Chisholm, K. Folting and K. G. Moodley, *Organometallics* **15**, 992-997 (1996).
413. Preparation and Structures of Arylmolybdenum(6+) Nitrido Compounds: $(2,4,6\text{-Me}_3\text{C}_6\text{H}_2)_3\text{Mo}\equiv\text{N}$ and $(2\text{-Me}_2\text{NCH}_2\text{C}_6\text{H}_4)_2(^t\text{BuO})\text{Mo}\equiv\text{N}$. K. G. Caulton, M. H. Chisholm, S. Doherty and K. Folting, *Organometallics* **14**, 2585-2588 (1995).
414. Tungsten-Carbon, Carbon-Carbon and Carbon-Hydrogen Bond Activations in the Chemistry of 1,2- $W_2R_2(\text{OR}')_4(W\equiv W)$ Complexes. 4. Phosphine- and Amine-Promoted Ligand Migrations and $\alpha\text{-C-H}$ Activations in the Formation of Alkyldiyne Hydrido Ditungsten Compounds. R. J. Blau, M. H. Chisholm, B. W. Eichhorn, J. C. Huffman, K. S. Kramer, E. B. Lobkovsky and W. E. Streib, *Organometallics* **14**, 1855-1870 (1995).
415. Complexes with Polar W-W Multiple Bonds: $[\text{W}_2(\text{O}i\text{Pr})_4\text{L}(\text{dmpe})_2]$ ($\text{L} = (\text{H})_2, \text{CO}$) and $[\text{W}_2(\text{O})_4(\mu\text{-O})\{\text{W}(\text{CO})(\text{dmpe})_2\}_2]$. M. H. Chisholm, K. S. Kramer and W. E. Streib, *Angew. Chemie Intl. Ed. Engl.*, **34**, 891-893 (1995).

416. Metathetic Reactions Involving Ditungsten Hexapivalate. Preparation and Structures of $W_2(O_2C^tBu)_2(O^tBu)_2(N^iPr)_2$, $W_2(O_2C^tBu)_4(N^iPr)_2$, $W_2(O_2C^tBu)_2(O^tBu)_4$ and $Na_2W_4O_4Cp_2(O_2C^tBu)_6$ Solvate, where Cp = C_5H_5 . T. A. Budzichowski, M. H. Chisholm, K. Folting, M. G. Fromhold and W. E. Streib, *Inorganica Chimica Acta*, **235**, 339-347 (1995).
417. Dimetal Hepta- and Octa-alkoxide Anions of Molybdenum and Tungsten, $M_2(OR)_7^-$ and $M_2(OR)_8^{2-}$ ($M \equiv M$). Preparation, Structures, Oxidation and A Study of the Thermal Decomposition of $W_2(OR)_7^-$ to Give $W_2(H)(O)(OR)_6^-$, where R = tBu and iPr . T. A. Budzichowski, M. H. Chisholm, K. Folting, J. C. Huffman and W. E. Streib, *J. Am. Chem. Soc.*, **117**, 7428-7440 (1995).
418. The Mechanistic Role of H_2O and the Ligand in the Chemical Vapor Deposition of Cu, Cu_2O , CuO , and Cu_3N from Bis-(1,1,1,5,5,5-hexafluoropentane-2,4-dionato) Copper (II). J. Pinkas, J. C. Huffman, D. V. Baxter, M. H. Chisholm and K. G. Caulton, *Chem. Mater.*, **7**, 1589-1596 (1995).
419. Is It Possible to Stabilize Complexes with a Tungsten Phosphorus Triple Bond? T. A. Budzichowski, M. H. Chisholm, M. Scheer, K. Schuster and W. E. Streib, *J. Chem. Soc., Chem. Comm.*, 1671-1672 (1995).
420. The Synthesis and Structural Characterization of the Sterically Demanding *Tris*(3,5-di-*t*-butylpyrazolyl)hydroborato Ligand, [$TP^{But}2$]: A Highly Twisted, Propeller-Like, Ligand System. C. M. Dowling, D. Leslie, M. H. Chisholm and G. Parkin, *Main Group Chemistry* **1**, 29-52 (1995).
421. Single Site Metal Alkoxide Catalysts for Ring Opening Polymerizations. Poly(dilactide) Synthesis Employing $HB(3-^tBupz)_3MgOEt$. M. H. Chisholm and N. W. Eilerts, *Chem. Comm.* 853 (1996).
422. [$Cp^*CO(P_4)\{(Cp^*CO)_2(\mu-CO)\}$] ($Cp^* = \eta^5-C_5H_3tBu_2$): A Complex with a P_4 Unit on the Way to a P_1 and a P_3 Ligand. M. Scheer, U. Becker, M. H. Chisholm, J. C. Huffman, F. Lemoigno and O. Eisenstein, *Inorg. Chem.*, **34**, 3117-3119 (1995).
423. The Emerging Chemistry of Polynuclear Metal Hydrido Alkoxides: $H_xM_y(OR)_z$. M. H. Chisholm, *Chem. Soc. Rev.* **24**, 79-87 (1995).
424. Low Pressure Chemical Vapor Deposition of Metallic Films of Iron, Manganese, Cobalt, Copper, Germanium and Tin Employing Bis(trimethylsilylamido) Complexes, $M(N(SiMe_3)_2)_n$. D. V. Baxter, M. H. Chisholm, G. J. Gama, A. L. Hector and I. P. Parkin, *Adv. Mat. CVD*, **1**, 49-51 (1995).
425. Origin of Different Coordination Polyhedra for $Cu[CF_3C(O)CHC(O)CF_3]_2L$ ($L = H_2O$ and NH_3). J. Pinkas, J. C. Huffman, M. H. Chisholm and K. G. Caulton, *Inorg. Chem.*, **34**, 5314-5318 (1995).
426. Selective Hydrogenations of Dienes and Olefins by $W_2(OCH_2^tBu)_6(py)_2$. J. T. Barry and M. H. Chisholm, *Chem. Commun.*, 1599-1600 (1995).
427. $\{H(3-^tBupz)B(3-^tBupz)_2-\eta^2\}AlEt_2$ and $\{H(3-^tBupz)B(3-^tBupz)(5-^tBupz)-\eta^2\}AlEt_2$. Structure, Dynamic Solution Behavior and Studies of the 1,2-Borotropic Shift. M. H. Chisholm, N. W. Eilerts and J. C. Huffman, *Inorg. Chem.* **35**, 445-450 (1996).
428. A Rheological Study of the Mesomorphic State of Dimolybdenum and Dicopper Octanoates. M. R. Mackley, R. T. J. Marshall, M. H. Chisholm and E. F. Putilina, *Chem. Mater.*, **7**, 1938-1941 (1995).
429. Solution Studies of $Ru_2(O_2CR)_4^{n+}$ Complexes ($n = 0$ and 1 and $O_2CR =$ Octanoate, Crotonate, Dimethylacrylate, Benzoate and *p*-Toluate) and Solid-State Structures of $Ru_2(O_2C-p-tolyl)_4(THF)_2$, $[Ru_2(O_2C-p-tolyl)_4(THF)_2]^+[BF_4]^-$, and $Ru_2(O_2C-p-tolyl)_4(CH_3CN)_2$: Investigations of the Axial Ligation on the Ru_2 Core. M. H. Chisholm, G. Christou, K. Folting, J. C. Huffman, C. A. James, J. A. Samuels, J. L. Weseman and W. H. Woodruff, *Inorg. Chem.*, **35**, 3643-3658 (1996).
430. Nitro-Substituted Benzoates of Dimolybdenum: The Mo_2^{4+} δ to Ligand Charge Transfer Band. M. H. Chisholm, J. C. Huffman, S. S. Iyer and M. A. Lynn, *Inorg. Chimica Acta*, **243**, 283-293 (1996) [Honor Issue for Harry B. Gray].
431. Ligandos Alcóxido en el Desarrollo de la Química Organometálica de los Metales de Transición de los Primeros Grupos. M. H. Chisholm, *Education Química* **8**, 32-39 (1997).
432. Alkoxides and Related O-Donor Ligands in Organometallic Chemistry. *Polyhedron Symposium-in-Print*, M. H. Chisholm and I. P. Rothwell, Eds., No. 16 (1995).

433. $\text{Mo}_2(\text{O})(\text{OCH}_2^t\text{Bu})_4(\text{PMe}_3)_4$. Preparation and Characterization of a Partial Hydrolysis Product of $\text{Mo}_2(\text{OCH}_2^t\text{Bu})_6$. T. A. Budzichowski, M. H. Chisholm, K. Folting and K. S. Kramer, *Polyhedron*, **15**, 3085-3091 (1996).
434. Tetranuclear Phosphinidine, Phosphide, Arsenide and Oxide Anionic Clusters of Molybdenum and Tungsten Supported by Neopentoxide Ligands: $\text{Na}(18\text{-crown-6})[\text{M}_4(\text{OCH}_2^t\text{Bu})_{11}\text{PSiMe}_3]$, $\text{K}(18\text{-crown-6})[\text{M}_4(\text{OCH}_2^t\text{Bu})_{10}(\text{E})]$, where E = P and As, and $\text{K}(18\text{-crown-6})_2[\text{Mo}_4(\text{OCH}_2^t\text{Bu})_{11}(\text{O})]$. T. A. Budzichowski, M. H. Chisholm, K. Folting, W. E. Streib and M. Scheer, *Inorg. Chem.*, **35**, 3659-3666 (1996).
435. Molecular Routes to Metal-Carbides, -Nitrides, and -Oxides. 2. Studies of the Ammonolysis of Metal Dialkylamides and Hexamethyldisilylamides. D. V. Baxter, M. H. Chisholm, G. J. Gama, V. F. DiStasi, A. L. Hector and I. P. Parkin, *Chem. Mater.*, **8**, 1222-1228 (1996).
436. Further Comments on the Lability of $\text{M}_2(\text{O}_2\text{CR})_4$ Complexes and Structural Characterization of $[\text{Bu}_4\text{N}]_2^+[\text{Rh}_8(\text{O}_2\text{C}^t\text{Bu})_{16}(\text{O}_2\text{CMe})_2(\text{toluene})_2]^{2-}$. M. H. Chisholm, K. Folting, K. G. Moodley and J. E. Wesemann, *Polyhedron*, **15**, 1903-1905 (1996).
437. Ditungsten Hexaalkoxides: Templates for Organometallic Chemistry and Catalysis. M. H. Chisholm, *J. Chem. Soc. Dalton Trans.* 1781-1791 (1996) [A Dalton Perspective].
438. The Clothing of Metal Ions: Coordination Chemistry of the Turn of the Millennium. M. H. Chisholm, *The New Chemistry*, in press (1997).
439. Chemical Vapor Deposition of Electrochromic Tungsten Oxide Films Employing Volatile Tungsten(6+) Oxo Alkoxide/ β -diketonate Complexes. D. V. Baxter, M. H. Chisholm, S. Doherty and N. E. Gruhn, *Chem. Comm.*, 1129-1130 (1996).
440. Incorporation of $\text{Ru}_2(\text{O}_2\text{C}(\text{CH}_2)_6\text{CH}_3)_4$ into Extended Chains: Interaction of $\text{Ru}_2(\text{O}_2\text{C}(\text{CH}_2)_6\text{CH}_3)_4$ with Pyrazine, 4-Cyanopyridine, TCNE and *p*-Benzoquinone. J. L. Wesemann and M. H. Chisholm, *Inorg. Chem.* **36**, 3258-3267 (1997).
441. $\text{Mo}_2(\text{OCH}_2^t\text{Bu})_6(\text{Cp})\text{Na}(\text{DME})$. Preparation, Structure and Solution Behavior. T. A. Budzichowski, M. H. Chisholm and W. E. Streib, *Can. J. Chem.* **74**, 2386-2391 (1996).
442. Site Selective Hydrogenolysis, Hydrogenation and Alcoholysis Involving the Homometallic Cluster $\text{W}_6(\text{H})_5(\text{C}^i\text{Pr})(\text{O}^i\text{Pr})_{12}$. M. H. Chisholm and K. S. Kramer, *Chem. Comm.*, 1331-1332 (1996).
443. Syntheses, Structure and Thermal Behavior of Cu *hfacac* Complexes Derived from Ethanol-amines. J. Pinkas, J. C. Huffman, J. C. Bollinger, W. E. Streib, D. V. Baxter, M. H. Chisholm and K. G. Caulton, *Inorg. Chem.* **36**, 2930-2937 (1997).
444. Organometallic Chemistry of $[\text{W}_2(\text{ONp})_8]$. M. H. Chisholm, K. Folting, M. A. Lynn, W. E. Streib and D. B. Tiedtke, *Angew. Chem. Intl. Edit. Engl.* **36**, 52-54 (1997).
445. Reversible Carbon-Hydrogen Bond Oxidative Addition Across a W-W Multiple Bond. M. H. Chisholm, J.-H. Huang and J. C. Huffman, *JOMC* **528**, 221-223 (1997) [Honor Issue for M. L. H. Green].
446. Ring-Opening of σ -Thienyl and σ -Furyl Ligands at Ditungsten ($\text{M}\equiv\text{M}$) Centers. M. H. Chisholm, S. T. Haubrich, J. C. Huffman and W. E. Streib, *J. Am. Chem. Soc.* **119**, 1634-1647 (1997).
447. Reaction of $\text{W}_2(\text{H})(\text{OR})_7$, $\text{W}_2(\text{OR})_6(\text{py})_2$ and $\text{W}_4(\text{OCH}_2^c\text{C}_4\text{H}_7)_{12}$ Compounds ($\text{R} = {}^i\text{Pr}$, CH_2^tBu , ${}^c\text{C}_5\text{H}_9$) with Azobenzene, 1,2-Diphenylhydrazine and 1,1-Dimethylhydrazine. J. T. Barry, M. H. Chisholm, K. Folting, J. C. Huffman and W. E. Streib, *Polyhedron* **16**, 2113-2133 (1997).
448. Dinuclear (d^3 - d^3) Diolate Complexes of Molybdenum and Tungsten. 1. Preparation and Characterization of Complexes Derived from 2,5-Dimethylhexane-2,5-diol. M. H. Chisholm, I. P. Parkin, K. Folting and E. Lobkovsky, *Inorg. Chem.* **36**, 1636-1641 (1997).
449. Resonance Raman Spectra of $[\text{M}_6\text{X}_8\text{Y}_6]^{2-}$ Cluster Complexes ($\text{M} = \text{Mo}$, W ; X , $\text{Y} = \text{Cl}$, Br , I). J. R. Schoonover, T. C. Zietlow, D. L. Clark, J. A. Heppert, M. H. Chisholm, H. B. Gray, A. P. Sattelberger and W. H. Woodruff, *Inorg. Chem.*, **35**, 6606-6613 (1996).
450. Dinuclear (d^3 - d^3) Diolate Complexes of Molybdenum and Tungsten. 2. Derivatives of 2,2-methylenebis(6-*t*-butyl-4-methylphenoxide). Direct Observation of the Conversion of Bridged to Chelate Isomers ($\text{M} = \text{Mo}$) and the Reversible Carbon-Hydrogen Bond Oxidative Addition ($\text{M} = \text{W}$). M. H. Chisholm, J.-H. Huang, J. C. Huffman and I. P. Parkin, *Inorg. Chem.* **36**, 1642-1651 (1997).

451. Synthesis and Structural Characterizations of 2,2-Methylene-bis(6-*t*-butyl-4-methyl-phenoxide) Complexes of Titanium, Zirconium and Tantalum. M. H. Chisholm, J.-H. Huang, J. C. Huffman, W. E. Streib and D. B. Tiedtke, *Polyhedron* **16**, 2941-2949 (1997).
452. The Non-Perpendicular and Non-Parallel Alkyne Bridge in $W_2(OCH_2^tBu)_8(\mu-C_2H_2)$. M. H. Chisholm and M. A. Lynn, *J. Organometal. Chem.* **550**, 141-150 (1998) [Ken Wade Honor Issue].
453. Modeling the Chemistry of Hydrotreating Processes. *Polyhedron Symposium-in-Print* **16**, (1997).
454. A Study of Tertiary Phosphine Ligand Exchange Reactions Involving the M-M Quadruply Bonded Complexes $M_2Cl_4L_4$ where $L = PMe_3, PEt_3, P Bu_3^n$, and PMe_2Ph . M. H. Chisholm and J. M. McInnes, *J. Chem. Soc., Dalton Trans.* 2735-2743 (1997).
455. Polynuclear Metal Hydrido Alkoxides. 2. Hydrogenation of 1,2- $W_2(iBu)_2(O^iPr)_4$. Preparation, Characterization and Some Reactions of $W_6H_5(C^iPr)(O^iPr)_{12}$, $W_2(H)_2(O^iPr)_4(dmpe)_2$ and $W_4(H)_4(O^iPr)_8(dmpm)_3$, where *dmpe* = bisdimethylphosphinoethane and *dmpm* = bisdimethylphosphinomethane. M. H. Chisholm, K. Folting, K. S. Kramer and W. E. Streib, *J. Am. Chem. Soc.* **119**, 5528-5539 (1997).
456. Polynuclear Metal Hydrido Alkoxides. 3. Preparation and Characterization of $Mo_4(\mu-H)_3(O^tBu)_7(HNMe_2)$ and $K_2(18-crown-6)_3[Mo_4(\mu-H)(OR)_{12}]_2$, Where $R = CH_2^iPr$ and CH_2^tBu . T. A. Budzichowski, M. H. Chisholm, J. C. Huffman and K. S. Kramer, *Dalton Transactions*, 2563-2568 (1998).
457. Studies of Thermotropic Properties and the Mesophase of Mixtures of *n*-Alkanoates and Perfluoro-*n*-alkanoates of Dimolybdenum (M-4-M). D. V. Baxter, M. H. Chisholm, M. A. Lynn, E. F. Putilina, S. T. Trzaska and T. Swager, *Chem. Mater.* **10**, 1758-1763 (1998).
458. Molecular Routes to Metal-Carbides, -Nitrides and -Oxides. 3. Chemical Vapor Deposition Employing $X_3W \equiv *CCMe_3$, where $X = CH_2CMe_3, NMe_2$ and O^tBu and $*C = ^{12}C$ or ^{13}C , and $(^tBuO)_3W \equiv N$. Z. Xue, S.-H. Chuang, K. G. Caulton and M. H. Chisholm, *Chem. Mater.* **10**, 2365-2370 (1998).
459. Further Studies of the Reaction of Cyclopentadienyl, Substituted Cyclopentadienyl and Indenyl Ligands with $M_2Cl_2(NMe_2)_4$ ($M = Mo$ or W). Crystal and Molecular Structures of $Mo_2(indenyl)_2(NMe_2)_4$ and $W_2(MeCp)_2(NMe_2)_4$. R. H. Cayton, M. H. Chisholm, K. Folting and J. L. Wesemann, *J. C. Soc., Dalton Trans.* 3161-3165 (1997).
460. Life Beyond the Sandwich, *The Chemical Intelligencer* 50-54 (1997).
461. Pyridine, Isocyanide, Carbodiimide and Allene Adducts of Hexakis(trifluoromethyl *t*-butoxy)ditungsten. A Comparison of Ligand Binding to $W_2(O^tBu)_6$ and $W_2(OCMe_2CF_3)_6$. T. A. Budzichowski, M. H. Chisholm, K. Folting, J. C. Huffman, W. E. Streib and Darin B. Tiedtke, *Polyhedron* **17**, 857-867 (1998).
462. A Dinuclear Tungsten(III) Complex with a Tungsten-Tungsten Triple Bond Supported by an Asymmetric Arrangement of Ligands: $W_2Cl_3(OCMe_3)_3(NHMe_2)_2$. M. H. Chisholm, K. Folting and D. Wu, *Acta Crystallogr. Sect. C* **C54**, 225-227 (1998).
463. Preparation and Characterization of $(^iPrO)_4WW(\eta^2-dmpe)_2(CO)$, $(\eta^1-O_2CH)(^iPrO)_4WW(\eta^2-dmpe)_2(H)$, $[H(\eta^2-dmpe)WWO_2]_2(\mu-O)$ and $W_2(O)_4(\mu-O)[W(\eta^2-dmpe)_2(CO)]_2$, where *dmpe* = bisdimethylphosphinomethane. Compounds with W-W Bonds Between Metal Atoms in Greatly Differing Oxidation States. M. H. Chisholm, K. Folting, K. S. Kramer and W. E. Streib, *Inorg. Chem.* **37**, 1549-1554 (1998).
464. Preparation, Characterization and Electronic Structure of $W_2(NMe_2)_2(OR_f)_4$, Where $R_f = CMe_2CF_3, CMe(CF_3)_2$ and $C(CF_3)_3$, as Deduced by Photoelectron Spectroscopic Studies and the Single Crystal X-ray Structure of $R_f = OCMe(CF_3)_2$. T. A. Budzichowski, M. H. Chisholm, D. B. Tiedtke, M. A. Lynn, N. E. Gruhn and D. L. Lichtenberger, *Polyhedron* **17**, 705-711 (1998).
465. Concerning the Stereochemistry of Poly(lactide), PLA. Previous Assignments are Shown to be Incorrect and A New Assignment is Proposed. M. H. Chisholm, S. S. Iyer, M. E. Matison, D. G. McCollum and M. Pagel, *Chem. Comm.*, 1999-2000 (1997).
466. Sir Geoffrey Wilkinson as a Research Mentor. *Polyhedron Symposium-in-Print* **12** (1997)

467. Dinuclear (d^3-d^3) Diolate Complexes of Molybdenum and Tungsten. 3. Bridging and Chelating Isomers of $M_2(NMe_2)_2(O\sim\sim CHMe\sim\sim O)_2$, where $O\sim\sim CHMe\sim\sim O$ is the Dianion of 2,2'-thylidenebis(4,6-di-*tert*-butylphenol). Kinetic Versus Thermodynamic Considerations. M. H. Chisholm, K. Folting, W. E. Streib and D. Wu, *Inorg. Chem.* **37**, 50-55 (1998).
468. Preparation and Characterization of the Kinetic and Thermodynamic Isomers of Dinuclear Molybdenum and Tungsten Complexes with Metal-Metal Triple Bonds Supported by *p*-*tert*-Butylcalix[4]arene Anions. M. H. Chisholm, K. Folting, W. E. Streib and D. Wu, *Chem. Comm.* 379-380 (1998).
469. Organometallic Chemistry of $W_2(OCH_2^tBu)_8(M=M)$: Substrate Uptake and Activation at a Tungsten-Tungsten Double Bond. M. H. Chisholm, W. E. Streib, D. B. Tiedtke and D. Wu, *Chem. - A Europ. J.* **4**, 1470-1479 (1998).
470. Recent Advances in the Chemistry of Metal Amides and Metal Alkoxides. *Polyhedron Symposium-in-Print*, M. H. Chisholm, Ed., (1998).
471. Nitrido Dimers and Trimers of Tungsten Supported by $tBuMe_2SiO$ and CF_3Me_2CO Ligands, Respectively. Factors Influencing the Reductive Cleavage of Nitriles by Tungsten-Tungsten Triple Bonds and An Analysis of the Structure of the Cyclootrimer. M. H. Chisholm, K. Folting, M. L. Lynn, D. B. Tiedtke, F. Lemoigno and O. Eisenstein, *Chemistry - A Europ. J.*, **5**, 2318-2326 (1999)
472. A Study of the Photochemical Reaction Between $W_2(OCH_2^tBu)_6$ and P_4 . Characterization of the Phosphido Cluster $W_4(P)_2(OCH_2^tBu)_{10}$. M. H. Chisholm, K. Folting and M. Scheer, *Polyhedron Symposium-in-Print* **17**, 2931-2935 (1998).
473. Dinuclear Molybdenum and Tungsten Complexes with Metal-Metal Triple Bonds Supported by *p*-*tert*-Butylcalix[4]arene Ligands. M. H. Chisholm, K. Folting, W. E. Streib and D.-D. Wu, *Inorg. Chem.* **38**, 5219-5229 (1999).
474. A Two-Step Low Pressure Chemical Vapour Deposition Process for the Production of Tungsten Metal Thin Films. D. V. Baxter, K. G. Caulton, M. H. Chisholm, S.-H. Chuang and C. D. Minear, *Chem. Comm.* 1447-1448 (1998).
475. Metal Clusters and Magnetism within Clusters, *Polyhedron Symposium-in-Print*, M. H. Chisholm. Ed., **17**, 2773-2774 (1998).
476. π -Donor Ligands in Organometallic Chemistry of the Transition Metal Elements. M. H. Chisholm, *The Chemist* **75**, 11-16 (1998).
477. Microstructure of Poly(lactide). Phase-sensitive HETCOR Spectra of Poly(meso-lactide), Poly(*rac*-lactide) and Atactic Poly(lactide). M. H. Chisholm, S. S. Iyer, D. G. McCollum, M. Pagel and U. Werner-Zwanziger, *Macromolecules*, **32**, 963-973 (1998).
478. Some Studies of the Substitution Chemistry of $[Rh_2(OAc)_2(CH_3CN)_4][BF_4]_2$ with Monodentate and Bidentate Tertiary Phosphines. M. H. Chisholm, J. C. Huffman and S. S. Iyer, *Dalton Trans.*, 1483-1489 (2000).
479. Preparation and Characterization of 1,3-Butadiene and Isoprene Complexes. $W_2(OCH_2^tBu)_6(\text{diene})(py)$, and Studies of the Selective Hydrogenation of 1,3-Dienes. J. T. Barry, J. C. Bollinger, M. H. Chisholm, K. C. Glasgow, J. C. Huffman, E. A. Lucas, E. B. Lubkovsky and W. E. Streib, *Organometallics* **18**, 2300-2308 (1999).
480. Compounds in Which the Mo_2^{4+} Unit is Embraced by One, Two or Three Formamidinate Ligands Together with Acetonitrile Ligands. M. H. Chisholm, F. A. Cotton, L. M. Daniels, K. Folting, J. C. Huffman, S. S. Iyer, C. Lin, Ann M. Macintosh and C. A. Murillo, *Dalton Trans.* 1387-1391 (1999).
481. On the Mechanism of Carboxylate Ligand Scrambling at Mo_2^{4+} Centers: Evidence for a Catalyzed Mechanism. M. H. Chisholm and A. M. Macintosh, *Dalton Trans.* 1205-1207 (1999).
482. "Molecular Clusters – An Overview" in *Metal Clusters in Chemistry*, P. Braunstein, L. A. Oro and P. R. Raithby, Eds., Wiley-VCH Publishers: Germany, **1**, 8-9 (1999).

483. Concerning the Mechanism of Ring-Opening Polymerization by Coordinate Catalysts: The 2D Homonuclear J-Resolved Spectrum of Poly(cyclohexene oxide). M. H. Chisholm, J. K. Crandall, D. G. McCollum and M. Pagel, *Macromolecules* **32**, 5744-5746 (1999).
484. Reductive Cleavage of Aldehydes to Oxo-Alkylidene and Oxo-Alkylidyne Complexes in Their Reactions with $W_2(OCH_2^tBu)_6(py)_2$. M. H. Chisholm, K. Folting, K. C. Glasgow, E. Lucas and W. E. Streib, *Organometallics* **19**, 884-892 (2000).
485. One Dimensional Polymers and Mesogens Incorporating Multiple Bonds Between Metal Atoms. M. H. Chisholm, *Accts. Chem. Res.* **33**, 53-61 (2000)
486. Thermodynamics of Complexes of Bioinorganic and Technological Interest. M. H. Chisholm, V. Salvado and A. Liobet, Eds., *Polyhedron Symposium-in-Print* **18**, (1999).
487. Foreword in "Thermodynamics of Complexes of Bioinorganic and Technological Interest", M. H. Chisholm, *Polyhedron Symposium-in-Print* **18**, 3201-3203 (1999) M. H. Chisholm, V. Salvado and A. Liobet, Eds.
488. Chiral C_1 and C_2 Symmetric (Cyclooctane-1,5-diyl)bis(2-pyrazolyl)borate Complexes of Potassium and Thallium. Preparation, Structures and Solution Behavior. M. H. Chisholm, S. S. Iyer and W. E. Streib, *New Journal of Chemistry* **24**, 393-398 (2000).
489. Heterogeneous Electron-Transfer Rate Constants for $M_2(O_2CR)_4^{o/+}$ where M = Mo, W, Ru, Rh and R = Alkyl and Aryl. M. H. Chisholm, K. C. Glasgow, L. J. Klein, A. M. Macintosh and D. G. Peters, *Inorganic Chemistry*, **39**(19), 4354-4357 (2000).
490. Quadruple Metal-Metal Bonds with Strong Donor Ligands. Ultraviolet Photoelectron Spectroscopy of $M_2(form)_4$ (M = Cr, Mo, W; form = Q,Q'-diphenylformamidinate). D. L. Lichtenberger, M. A. Lynn, M. H. Chisholm, *J. Am. Chem. Soc.* **121**, 12167-12176 (1999).
491. d^3 - d^3 -Diolates of Dimolybdenum and Tungsten. 4. Molybdenum Derivatives of S(-)-1,1-Diphenyl-1,2-propanediol, S(-)1,1,2-Triphenyl-1,2-ethanediol and (1R)(2R)-(-)-1,2-Dicyclohexyl-1,2-ethanediol. M. H. Chisholm, K. Folting, J. C. Huffman, H. Li, A. M. Macintosh and D. Wu, *Polyhedron* **19**, 375-380 (2000).
492. Dimolybdenum Bis(S,S,S-triisopropanolaminato(3-)): A Blue Compound with an Unusual Mo-Mo Triple Bond. M. H. Chisholm, A. M. Macintosh, J. C. Huffman, D. Wu, E. R. Davidson, R. J. H. Clark and S. Firth, *Inorg. Chem.*, **39**, 3544-3550 (2000).
493. A Comparison of the Influences of Alkoxide and Thiolate Ligands on the Electronic Structure and Reactivity of Molybdenum(3+) and Tungsten (3+) Complexes. Preparation and Structures of $M_2(O^tBu)_2(S^tBu)_4$, $[Mo(S^tBu)_3(NO)]_2$ and $W(S^tBu)_3(NO)(py)$. M. H. Chisholm, E. R. Davidson, J. C. Huffman and K. B. Quinlan, *J. Am. Chem. Soc.*, **123**(39), 9652-9664 (2001).
494. Further Studies on the Substitutional Behavior of 1,2-Mo₂Br₂(CH₂SiMe₃)₄. Alkyl, Amide, Phosphide, Alkoxide and Thiolate for Bromide Exchange and Isomerizations of 1,1- and 1,2-Mo₂X₂(CH₂SiMe₃)₄ Compounds. M. H. Chisholm, D. R. Click and J. C. Huffman, *Organometallics*, **19**(19), 3916-3924 (2000).
495. Molecular Design of Single-Site Metal Alkoxide Catalyst Precursors for Ring-Opening Polymerization Reactions Leading to Polyoxxygenates. 1. Polylactide Formation by Achiral and Chiral Magnesium and Zinc Alkoxides, (η^3 -L)MOR, where L = trispyrazolyl- and trisindazolylborate ligands. M. H. Chisholm, N. Eilerts, J. C. Huffman, S. S. Iyer, M. Pacold and K. Phomphrai, *J. Am. Chem. Soc.*, **122**, 11845-11854 (2000).
496. Molecular Design of Single Site Catalyst Precursors for the Ring-Opening Polymerization of Cyclic Ethers and Esters. 2. Can Ring-Opening Polymerization Occur by a Cis-Migratory Mechanism? B. Antleemann, M. H. Chisholm, S. S. Iyer, J. C. Huffman, D. Navarro-Llobet, M. Pagel, *Macromolecules*, **34**, 3159-3175 (2001).
497. Octakis(trimethylsilylmethyl)dioxotetramolybdenum. A Novel Tetranuclear Compound with Two Localized Metal-Metal Triple Bonds. M. H. Chisholm, D. R. Click and J. C. Huffman, *J. Organomet. Chem.*, **614-615**, 238-242 (2000).

498. Factors Influencing the Reductive Cleavage of C-X Multiple Bonds in Their Reactions with Metal-Metal Multiple Bonds (X = C, N, O, S). M. H. Chisholm, *The Chemical Record*, 1, 12-23 (2001).
499. The Electronic Structure and Bonding in $W_2(\mu-H)_2(O^iPr)_4(DMPE)_2$ and a Comparison with $Mo_2(O^iPr)_4(DMPE)_2$. M. H. Chisholm and M. A. Lynn. *J. Organomet. Chem.*, 621, 66-69 (2001).
500. Monomeric Metal Alkoxides and Trialkyl Siloxides: (BDI)Mg(O^tBu)(THF) and (BDI)Zn(OSiPh₃)(THF). Comments on Single Site Catalysts for Ring-Opening Polymerization of Lactides. M. H. Chisholm, J. C. Huffman and K. Phomphrai, *Dalton Trans.*, 222-224 (2001).
501. Oxalate-Bridged Complexes of Dimolybdenum and Ditungsten Supported by Pivalate Ligands: $(^tBuCO_2)_3M_2(\mu-O_2CCO_2)M_2(O_2C^tBu)_3$. Correlation of the Solid State, Molecular and Electronic Structures with Raman, Resonance Raman and Electronic Spectral Data. Bruce E. Bursten, Malcolm H. Chisholm, Robin J. H. Clark, Steven Firth, Christopher M. Hadad, Ann M. MacIntosh, Paul J. Wilson, Patrick M. Woodward and Jeffrey M. Zaleski. *J. Am. Chem. Soc.*, 124(12), 3050-3063 (2002).
502. Chalcogenide-Bridged Ditungsten (M-M) Complexes: An Experimental and Theoretical Study of the Electronic Structure and Bonding in $W_2(\mu-E)(\mu-OCH_2^tBu)_2(OCH_2^tBu)_6$, where E = O, S, Se and Te. J. Bollinger, M. H. Chisholm, D. R. Click, K. Folting, C. M. Hadad, D. B. Tiedtke and P. J. Wilson. *Dalton Trans.*, 2074-2082 (2001).
503. Three Coordinate Zinc Amide and Phenoxy Complexes Supported by Bulky Schiff Base Ligands. M. H. Chisholm, J. Gallucci, H. Zhen and J. C. Huffman, *Inorg. Chem.*, 40, 5051-5054 (2001).
504. Foreword to "Metal Alkoxide and Aryl Oxides," by D. C. Bradley, R. C. Mehrotra and I. P. Rothwell, John Wiley, (2001).
505. Ring-Opening of Lactides and Related Cyclic Monomers by Triaryltin(IV) Alkoxides and Amides. M.H. Chisholm and E.E. Delbridge, *Chem. Commun.*, 14, 1308-1309 (2001).
506. Structure and Magnetic Alignment of Metalloporphyrazine Columnar Aggregates in Their Mesophases and Crystalline Phases. Brian D. Pate, Sung-Min Choi, Ulrike Werner-Zwanziger, David V. Baxter, Jeffrey M. Zaleski and Malcolm H. Chisholm, *Chemistry of Materials*, 14, 1930-1936 (2002).
507. M_2 δ -to-Oxalate π^* Conjugation in Oxalate-Bridged Complexes Containing M-M Quadruple Bonds. Bruce E. Bursten, Malcolm H. Chisholm, Christopher M. Hadad, Jun Li and Paul J. Wilson, *Chem. Commun. (U.K.)*, 2382-2383 (2001).
508. Intermolecular Recognition and Crystal Packing in Molybdenum and Tungsten Coordination Polymers as Deduced from Powder x-ray Diffraction Data. M. H. Chisholm, P. J. Wilson and P.M. Woodward, *Chem. Commun. (U.K.)* 566-567 (2002).
509. Siloxide and Triflate Gallium (III) Complexes Supported by the BDI Ligand. Malcolm H. Chisholm, Diana Navarro-Llobet and Judith Gallucci, *Inorg. Chem.*, 40, 6506-6508 (2001).
510. Electronic Coupling in Covalently-Linked M-M Quadruple Bonds: M_2 δ to Ligand π Conjugation. Malcolm H. Chisholm, *J.O.M.C.*, 641, 15-25 (2002).
511. A Comparative Study in the Ring-Opening Polymerization of Lactides and Propylene Oxide. Malcolm H. Chisholm, Diana Navarro-Llobet, and William Simonsik, Jr. *Macromolecules*, 34, 8851-8857 (2001).
512. Synthesis, structural characterization of tricarbomethoxymethanate complexes of copper(II) and barium(II) and evaluation of their suitability for MODVC applications. D. F. Baxter, K. G. Caulton, W.C. Chiang, M. H. Chisholm, V. F. DiStasi, S. G. Dutremez, J. D. Martin and W. E. Streib. *N. J. Chem.*, 25(3), 400-407 (2001).
513. A Study of the Ring-Opening of Lactides and Related Cyclic Esters by Ph_2SnX_2 and Ph_3SnX Compounds (X = NMe₂,OR). Malcolm H. Chisholm and Ewan E. Delbridge. *N. J. Chem.*, 27, 1167-1176 (2003).
514. NMR Assignments of Regioregular Poly(propylene Oxide) at the Triad and Tetrad Level. Malcolm H. Chisholm and Diana Navarro-Llobet. *Macromolecules*, 35, 2389-2392 (2002).

515. Electronic Coupling Between Molybdenum and Tungsten Quadruple Bonds in Molecular Squares and Extended Chains Linked by Oxalate, Acetylenedicarboxylate and Perfluoroterephthalate Bridges. Bruce E. Bursten, Malcolm H. Chisholm, Christopher M. Hadad, Jun Li and Paul J. Wilson. *Israel J. Chem.*, **41**, 187-195 (2001).
516. Third-Order Nonlinear Optical Properties of Complexes with MM Triple and Quadruple Bonds (M = Mo, W) at 1064 nm by Degenerate Four-Wave Mixing. Brian D. Pate, Jonathan R. G. Thorne, Damon R. Click, Malcolm H. Chisholm and Robert G. Denning. *Inorg. Chem.*, **41**, 1975-78 (2002).
517. Coordination Chemistry and Reactivity of Monomeric Alkoxides and Amides of Magnesium and Zinc Supported by the Diiminato Ligand CH(CMeNC₆H₃-2,6-ⁱPr₂)₂. A Comparative Study. Malcolm H. Chisholm, Judith Gallucci and Khamphée Phomphrai. *Inorg. Chem.*, **41**(10) 2785-2794 (2002).
518. Perfluoroterephthalate Bridged Complexes with M-M Quadruple Bonds: (^tBuCO₂)₃M₂(μ-O₂CC₆F₄CO₂)M₂(O₂C^tBu)₃, where M = Mo or W. Studies of Solid-State, Molecular and Electronic Structure and Correlations with Electronic and Raman Spectral Data. Bruce E. Bursten, Malcolm H. Chisholm, Robin J. H. Clark, Steven Firth, Christopher M. Hadad, Paul J. Wilson, Patrick M. Woodward and Jeffrey M. Zaleski, *J. Am. Chem. Soc.*, **124** (41), 12244-12254 (2002).
519. Alkyne Adducts of Ditungsten Tetrapivalate. W₂(O₂C^tBu)₄(μ-RCCR¹)₂, where R = R' = Me, Et, Ph and R = Me, R' = Ph. Matthew J. Byrnes, Malcolm H. Chisholm, Judith Gallucci and Paul J. Wilson. *Organometallics*, **21**(11), 2240-2247 (2002).
520. Tristhiolatomolybdenum Nitrides, (RS)₃Mo≡N where R = ⁱPr and ^tBu, Preparation, Characterization and Comparisons with Related Trialkoxymolybdenumnitrides. Malcolm H. Chisholm, Ernest R. Davidson, Maren Pink and Kristine B. Quinlan, *Inorg. Chem.*, **41**, 3437-3443 (2002).
521. On the Electron Delocalization in the Radical Cations Formed by Oxidation of MM Quadruple Bonds Linked by Oxalate and Perfluoroterephthalate Bridges. Malcolm H. Chisholm, Brian D. Pate, Paul J. Wilson and Jeffrey M. Zaleski, *Chem. Comm.*, 1084-1085 (2002).
522. Polypropylene Carbonate. 1. More about Polypropylene Carbonate Formed from the Copolymerization of Propylene Oxide and Carbon Dioxide Employing a Zinc Glutarate Catalyst. Malcolm H. Chisholm, Diana Navarro-Llobet and Zhiping Zhou, *Macromolecules*, **35**, 6494-6504 (2002).
523. Electronic Coupling Between Molybdenum or Tungsten Quadruple Bonds Linked by Dicarboxylate Ligands. Malcolm H. Chisholm, *Dalton Trans.*, submitted (2003)
524. Further Investigation of the Ring-Opening Polymerization of Propylene Oxide. Catecholate Derivatives of Zn(II) and Al(III). Malcolm H. Chisholm, Judith Gallucci, Diana Navarro-Llobet and Hongshi Zhen, *Polyhedron*, **22**, 557-561 (2003).
525. Conformational Effects in β-Diiminato Ligated Magnesium and Zinc Amides, Solution Dynamics and Lactide Polymerization. Malcolm H. Chisholm and Khamphée Phomphrai, *Inorganic Chimica Acta*, **350**, 121-125 (2003).
526. Binolate Complexes of Lithium, Zinc, Aluminum, and Titanium: [(μ₃, μ₃-Biphenolate)₂Li₄(ⁿBuLi)₄], (μ₂, μ₂-Biphenolate)Li₂(μ₃-OCH(ⁱPr)₂)₂-Li₂L₂], [(μ₂, μ₂-Biphenolate)Zn(μ₂-OCH(ⁱPr)₂)₂Zn₂Et₂], [(μ₂-Biphenolate)AlMe(μ₂-OCH(ⁱPr)₂)AlMe₂], and [(Biphenolate)Ti₂Cl₆] (where Biphenolate = racemic 5, 5', 6, 6'-tetramethyl-3, 3'-di-*tert*-butyl-1, 1'-bi-2-phenolate, L = Tetrahydrofuran or Cyclohexene Oxide). Preparations, Structures, and Studies of Lactide Polymerization. M. H. Chisholm, C.-C. Lin, J. C. Gallucci and B.-T. Ko, *Dalton Trans.*, 406-412 (2003).
527. Thienyl Carboxylate Ligands Bound to M₂ Quadruple Bonds involving Molybdenum and Tungsten. Models for Dimetallated Polythiophenes. Matthew J. Byrnes and Malcolm H. Chisholm, *Chem. Commun.*, 2040-2041 (2002).
528. Cyclooctatetraene Ditungsten Alkoxides: W₂(μ-η⁵, η⁵-COT)(OR)₄, where R = CH₂^tBu, ⁱPr, and ^tBu. Bruce E. Bursten, Malcolm H. Chisholm, Michael L. Drummond, Judith C. Gallucci and Carl B. Hollandsworth, *Dalton Trans.*, **22**, 4077-4083 (2002).

529. Insights into the Metathesis Reaction involving M-M, C-C and M-C Triple Bonds from Computations Employing Density Functional Theory on Model Compounds $M_2(OH)_6$ and $M_2(SH)_6$, where M = Mo and W. Malcolm H. Chisholm, Ernest R. Davidson and Kristine B. Quinlan, *J. Am. Chem. Soc.*, **124**, 15351-15358 (2002).
530. Nitrogen Atom Exchange Between Molybdenum, Tungsten and Carbon. A Convenient Method for N-15 Labelling. Malcolm H. Chisholm, Ewan E. Delbridge, Andy R. Kidwell, Kristine B. Quinlan, *Chem. Commun.*, 126-127 (2003).
531. An Investigation into the Relative Influence of Alkoxide and Thiolate Ligands on the Metal-Carbon Triple Bonds in $X_3M\equiv CH$ Compounds, where M = Cr, Mo and W and X = OH, SH, OCH₃, SCH₃, OCF₃ and SCF₃ from Electronic Structure Calculations. Malcolm H. Chisholm, Ernest R. Davidson and Kristine B. Quinlan, *Polyhedron*, **22**(1), 145-152 (2002).
532. Lactide Polymerization by Well-Defined Calcium Coordination Complexes: Comparison with Related Magnesium and Zinc Chemistry. Malcolm H. Chisholm, Judith C. Gallucci and Khamphree Phomphrai, *Chem. Commun.*, 48-49 (2003).
533. Insights into the Schrock "Chop-Chop" Reaction Gained from Density Functional Theory and Preparation and Structure of $W_2(PhCCPh)(SC_6H_4-2-Me)_6$. Malcolm H. Chisholm, Ernest R. Davidson, Maren Pink, Kristine B. Quinlan. *Chem. Commun.*, 2770-2771 (2002).
534. Alkyne Adducts of $[W_2(OCH_2^tBu)_8]_n$ (M=M). Comparisons of Bridging and Terminal Addition Products. Malcolm H. Chisholm, Damon R. Click, Judith C. Gallucci, Christopher M. Hadad, and Paul J. Wilson, *J. Am. Chem. Soc.*, **124**, 14518-14519, (2002).
535. A study of the Ring-Opening Polymerization (ROP) of *L*-lactide by Ph_2SnX_2 Precursors (X = NMe₂, OPrⁱ): The Notable Influence of Initiator Group. Malcolm H. Chisholm and Ewan E. Delbridge. *New J. of Chem.*, **27**, 1177-1183 (2003).
536. $M_2(hpp)_4Cl_2$ and $M_2(hpp)_4$, where M=Mo and W: Preparations, Structure and Bonding and Comparisons with C₂, C₂H₂ and C₂Cl₂ and the Hypothetical Molecules $M_2(hpp)_4(H)_2$. M. H. Chisholm, C. M. Hadad, J. C. Gallucci, J. C. Huffman and P. J. Wilson, *J. Am. Chem. Soc.*, **125**, 16040-16049 (2003)
537. Tetranuclear Tungsten Alkoxides $[W_2COT(OR)_4]_2$, where R = Me, Et, and Pr. M. H. Chisholm, J. C. Gallucci and C. B. Hollandsworth. *J. Organomet. Chem.*, **684**, 269-276 (2003).
538. Reactions of $[W_2(OCH_2^tBu)_8](M=M)$ with Diazobenzene and Trimethylsilyl-diazomethane. Preparation and Structures of $[W_2(\mu OCH_2^tBu)_8](NPh)$ and $[W_2(\mu OCH_2^tBu)_8](N_2CHSiMe_3)$. M. H. Chisholm, D. R. Click, J. C. Gallucci and C. M. Hadad. *Dalton Trans.*, 3205-3210 (2003).
539. Alkyne Adducts of $[W_2(OCH_2^tBu)_8]$: Cases of Perpendicular and Skewed Bridges in Equilibrium with Terminal Bonded Isomers. M. H. Chisholm, D. R. Click, J. C. Gallucci, C. M. Hadad, and P. J. Wilson, *Organometallics*, **22**, 4725-4733 (2003).
540. Modeling the Catalyst Resting State in Aryl Tin(IV) Polymerization of Lactide and Estimating the Relative Rates of Transamidation, Transesterification and Chain Transfer. M. H. Chisholm, E. E. Delbridge and J. C. Gallucci, *New J. Chem.*, **6**, 145-152 (2004).
541. Electronic Coupling Between Molybdenum or Tungsten Quadruple Bonds Linked by Dicarboxylate Ligands. M. H. Chisholm, *Dalton Trans.*, **20**, 3821-3828 (2003). [A Dalton Celebration Perspective]
542. 9,10-Anthracene Dicarboxylate Bridged Complexes with M_2 Quadruply Bonded Dimetal Units: $[M_2(O_2C^tBu)_3]_2(\mu-9,10-An(CO_2)_2)$, where M = Mo or W. M. J. Byrnes, M. H. Chisholm, D. F. Dye, C. M. Hadad, B. D. Pate, P. J. Wilson and J. M. Zaleski, *Dalton Trans.*, 523-529 (2004).
543. Well-Defined Calcium Initiators for Lactide Polymerization. M. H. Chisholm, J. C. Gallucci and K. Phomphrai, *Inorg. Chem.*, **43**(21), 6717-6725 (2004).
544. Investigations on a Zinc Glutarate Catalytic System in the Copolymerization of Propylene Oxide and Carbon Dioxide. Z. Zhou, M. H. Chisholm, Navarro-Llobet, D., *Polymer Preprints*, **43**, 942-943 (2002).
545. Concerning the Mechanism of the Ring-Opening of Propylene Oxide in the Copolymerization of Propylene Oxide and Carbon Dioxide to Give Poly(propylene carbonate). M. H. Chisholm and Z. Zhou. *J. Am. Chem. Soc.*, **126**(35), 11030-11039, (2004).

546. Interconverting WW Triple Bonds and W₄ Clusters: Structures of W₄(OPrⁿ)₁₆ and [Li₂W₂(OPrⁿ)₈(DME)]₂. Malcolm H. Chisholm, Judith C. Gallucci and Carl B. Hollandsworth, *J. Clus. Sci.*, *16*(2), 231-247 (2005).
547. Proximity in W₂(OR)₆ Compounds. Crystal Structure of W₂(OBU¹)₆ and DFT Study of W₂(OMe)₆. Malcolm H. Chisholm, Judith C. Gallucci and Carl B. Hollandsworth. *Polyhedron*, in press (2005).
548. Regioregular and Regioirregular Oligoether Carbonates: A ¹³C{¹H} NMR Investigation. Matthew J. Byrnes, Malcolm H. Chisholm, Christopher M. Hadad and Zhiping Zhou. *Macromolecules*, *37*, 4139-4145, (2004).
549. Electronically-Coupled Tungsten-Tungsten Quadruple Bonds. Comparisons of Electron Delocalization in 3,6-Dioxypyridazine and Oxalate-Bridged Compounds. Malcolm H. Chisholm, Robin J. H. Clark, Judith C. Gallucci, Christopher M. Hadad and Nathan J. Patmore. *J. Am. Chem. Soc.*, *126*, 8308-8313, (2004).
550. New Generation Polymers: The Role of Metal Alkoxides as Catalysts in the Production of Polyoxxygenates. Malcolm H. Chisholm and Zhiping Zhou, *J. Mater. Chem.*, *14*, 3081-3092, (2004).
551. Gas-Phase and Solution-Phase Polymerization of Epoxides by Cr(salen) Complexes. Evidence for a Dinuclear Cationic Mechanism. Eva Schön, Xiangyang Zhang, Zhiping Zhou, Malcolm H. Chisholm and Peter Chen. *Inorg. Chem.*, *43*(23), 7278-7280 (2004).
552. The Cations M₂(O₂CBu¹)₄⁺, where M = Mo and W, and MoW(O₂CBu¹)₄⁺. Theoretical, Spectroscopic and Structural Investigations. Malcolm H. Chisholm, Jason S. D'Acchioli, Brian D. Pate, Nathan J. Patmore, Naresh Dalal and David Zipse, *Inorg. Chem.*, *44*, 1061-1067 (2005).
553. Ian Rothwell Obituary, Malcolm H. Chisholm, *Chem. Comm.*, (2004).
554. Concerning the Relative Importance of Enantiomorphic Site Versus Chain End Control in the Stereoselective Polymerization of Lactides: Reactions of (*R,R*-salen)- and (*S,S*-salen)-aluminum Alkoxides LAIOCH₂R Complexes (R = CH₃ and *S*-CHMeCl). Malcolm H. Chisholm, Nathan J. Patmore and Zhiping Zhou, *Chem. Comm*, 127-129 (2005).
555. Thienyl Carboxylate Ligands Bound to and Bridging MM Quadruple Bonds, M = Mo or W: Models for Polythiophenes Incorporating MM Quadruple Bonds. Matthew J. Byrnes, Malcolm H. Chisholm, Robin J. H. Clark, Judith C. Gallucci, Christopher M. Hadad and Nathan J. Patmore, *Inorg. Chem.*, *43*, 6334-6344 (2004).
556. 3,6-Dioxypyridazine Bridged Tungsten-Tungsten Quadruple Bonds. Comparisons of Electron Delocalisation with Oxalate Bridged Compounds. M. H. Chisholm, R. J. H. Clark, C. M. Hadad and N. J. Patmore, *Chem. Comm.*, 80-82 (2004).
557. Studies of the Binding of Propylene Oxide to Porphyrin and Salen M(III) Cations Where M = Al, Ga, Cr and Co. Peter Chen, Malcolm H. Chisholm, Judith C. Gallucci, Xiangyang Zhang and Zhiping Zhou, *Inorg. Chem.*, *44*, 2588-2595 (2004).
558. Linking Multiple Bonds Between Metal Atoms: Clusters, Dimers of Dimers and Higher Ordered Assemblies. Malcolm H. Chisholm and Ann. M. Macintosh, *Chem. Rev.*, (Washington, DC, United States), *105*(8), 2949-2976 (2005).
559. Studies of Oxalate-bridged MM Quadruple Bonds and Their Radical Cations (M = Mo or W): On the Matter of Linkage Isomers. Malcolm H. Chisholm, Jason S. D'Acchioli, Christopher M. Hadad and Nathan J. Patmore, *Dalton Trans.*, 1852-1857 (2005).
560. X₃M≡MX₃ Compounds of Molybdenum and Tungsten. Malcolm H. Chisholm and Carl B. Hollandsworth, in *Multiple Bonds Between Metal Atoms*, F. A. Cotton, C. A. Murillo and R. A. Walton, eds. Springer-Verlag: New York, Chapter 6 (2005).
561. Oligothiophenes Incorporating MM Quadruple Bonds, Malcolm H. Chisholm, Arthur J. Epstein, Judith C. Gallucci, Florian Feil and Wesley Pirkle, *Angew. Chem.*, *43*(20), 6334-6344 (2004).

562. A Comparative Study of the Coordination Chemistry and Lactide Polymerization of Alkoxide and Amide Complexes of Zinc and Magnesium with a β -Diiminato Ligand Bearing Ether Substituents. Malcolm H. Chisholm and Khamphée Phomphrai, *Inorg. Chem.*, **44**, 8004-8010 (2004).
563. Oxalate-Bridged Dinuclear M_2 Units: Dimers of Dimers, Cyclotetramers (Squares), and Extended Sheets ($M = Mo, W, Tc, Ru$ and Rh). Bruce E. Bursten, Malcolm H. Chisholm and Jason S. D'Acchioli, *Inorg. Chem.*, **44**, 5571-5579 (2005).
564. On the Solvatochromic Properties of the Oxalate-bridged Complexes $[(^tBuCO^2)_3M_2]_2(\mu-O_2C_2O_2)$ where $M = Mo$ or W . Malcolm H. Chisholm and Nathan J. Patmore, *Inorg. Chimica Acta*, **357**(13), 3877-3882 (2004).
565. Crystal and Molecular Structure of $W_2(OBu^t)_6$ and Electronic Structure Calculation In $W_2(OMe)_6$ in Various Conformers. Malcolm H. Chisholm, Judith C. Gallucci and Carl B. Hollandsworth, *Polyhedron*, in press (2005).
566. Arylzinc Alkoxides: $[ArZnOCHPr_2^i]_2$ and $Ar_2Zn_3(OCHPr_2^i)_4$ when $Ar = C_6H_5, p-F_3C_6H_4, 2,4,6-Me_3C_6H_2$ and C_6F_5 . Malcolm H. Chisholm and Hongfeng Yin, *Inorg. Chem.*, **44**(13), 4777-4785 (2005).
567. Comments on the Ring-opening Polymerization of Morpholine-2,5-dione Derivatives by Various Metal Catalysts and Characterization of the Products Formed in the Reactions Involving R_2SnX_2 , Where $X = OPr^i$ and NMe_2 and $R = Bu^n, Ph$ and $p-Me_2NCH_4$. Malcolm H. Chisholm, Judith C. Gallucci, Clemens Krempner and David C. Wiggernhorn, *Dalton Trans.*, submitted (2005).
568. Electronically-Coupled MM Quadruply-Bonded Complexes of Molybdenum and Tungsten. Malcolm H. Chisholm and Nathan J. Patmore, *Chem. Rec.*, **5**, 308-320 (2005).
569. Functionalized Terephthalates as Bridge MM Quadruple Bonds ($M = Mo, W$): Toward as Molecular Rheostats and Switches. Malcolm H. Chisholm, Florian Feil, Christopher M. Hadad and Nathan J. Patmore, *JACS*, ASAP (2005).
570. Long-Range Electronic Coupling of MM Quadruple Bonds ($M = Mo$ or W) via a 2,6-Azulenedicarboxylate Bridge. Mikhail V. Barybin, Malcolm H. Chisholm, Naresh S. Dalal, Thomas H. Holovics, Nathan J. Patmore, Randall Robinson and David J. Zipse, *JACS*, **127**, 15182-15190 (2005).
571. A New Metal-Organic Polygon Involving MM Quadruple Bonds: $M_8(O_2C^tBu)_4(\mu-SC_4H_2-3,4-\{CO_2\}_2)_6$ ($M = Mo, W$). Matthew J. Byrnes, Malcolm H. Chisholm and Nathan J. Patmore, *Inorg. Chem.*, **44**, 9347-9352 (2005).
572. Observation of 1MLCT and 3MLCT Excited States in Quadruply-Bonded Mo_2 and W_2 Complexes. Matthew J. Byrnes, Malcolm H. Chisholm, Judith C. Gallucci, Yao Liu, Ramkrishna Ramnauth and Claudia Turro, *JACS*, ASAP (2005).
573. Unexpected Formation of *anti*-1,2- $W_2(SBu^t)_2(NMe_2)_4$ in the Thiolytic of *gauche*-1,2- $W_2Cp_2(NMe_2)_4$ and $W_2COT(NMe_2)_4$ with Bu^tSH . Malcolm H. Chisholm, Judith C. Gallucci and C. B. Hollandsworth, *J. Organomet. Chem.*, **691** (1-2), 93-96 (2006).
574. $W_2(hmp)_4 \times 1.5$ Toluene, Malcolm H. Chisholm, Judith C. Gallucci and C. B. Hollandsworth, *Acta Cryst. C.*, in preparation (2005).
575. Tetra- μ -6-Methylpyridin-2-Olato-Ditungsten Toluene Sesquisolvate, Malcolm H. Chisholm, Judith C. Gallucci and Carl B. Hollandsworth, *Acta Cryst. E*, **51**, 2503-2504 (2005).
576. Alcoholysis of *gauche*-1,2- $(\eta^3-Cp)_2W_2(NMe_2)_4$: Structural Evidence for $W \equiv W$ Bond Cleavage and Hydrogen Transfer to Bound Cyclopentadiene. Malcolm H. Chisholm, Judith C. Gallucci and Carl B. Hollandsworth, *Inorg. Chem. Commun.*, in preparation (2005).

577. Oxalate Bridged MM Quadruple Bonds of Molybdenum and Tungsten Supported by Pivalate Ligands. Malcolm H. Chisholm and Nathan J. Patmore, *Inorg. Syn.*, submitted (2005).
578. The Direct Observation of a ¹MLCT State by Ultrafast Transient Absorption Spectroscopy in Mo₂(O₂C-9-anthracene)₄. Gotard T. Burdzinski, Ramkrishna Ramnauth, Malcolm H. Chisholm and Terry L. Gustafson, *J. Am. Chem. Soc.* submitted (2005).