JOURNAL PUBLICATIONS

Publications in print:

1. Buchanan, M. Minelli, M. T. Ashby, T. J. King, J. H. Enemark, and C. D. Garner, "Crystal Structure and Spectroscopic Studies of $[MoO_2(L\text{-}cysOMe)_2]$", *Inorg. Chem.*, *23*, 495-500, **1984**.

2. M. T. Ashby and D. L. Lichtenberger, "Cyclic Polythioether Complexes: Preparation and Crystal Structure of Tricarbonyl(1,4,7-trithiacyclononane)molybdenum(0)", *Inorg. Chem.*, *24*, 636-638, **1985**.

3. M. T. Ashby, J. H. Enemark, D. L. Lichtenberger, and R. B. Ortega, "Acyclic Polythioether Complexes: Preparation and Crystal Structure of Tricarbonyl(2,5,8-trithianonane)molybdenum(0)", *Inorg. Chem.*, *25*, 3154-3157, **1986**.

4. M. T. Ashby and J. H. Enemark, "Control of the Reactivity and Coordination Number of a 16-Electron Complex by π Donating Thiolate Ligands", *J. Am. Chem. Soc.*, *108*, 730-733, **1986**.

5. M. T. Ashby and J. H. Enemark, "Cycloaddition of Alkynes to CpFe(CX)(CY)SR (CX,CY= CO,CS,$CNCH_3$) to Give RS-Fe-C(=Y)-C=C Heterometallacycles", *Organometallics*, *6*, 1318-1323, **1987**.

6. M. T. Ashby and J. H. Enemark, "Cycloaddition of Alkenes and Alkynes to $CpFe(CO)_2PR_2$ to Give R_2P-Fe-C(=O)-C=C Heterometallacycles", *Organometallics*, *6*, 1323-1327, **1987**.

7. M. T. Ashby, J. H. Enemark, and D. L. Lichtenberger, "Destabilizing dπ-pπ Orbital Interactions and the Alkylation Reactions of Iron(II)-Thiolate Complexes", *Inorg. Chem.*, *27*, 191-197, **1988**.

8. W. G. Bentrude, W. N. Setzer, A. E. Sopchik, S. Chandrasekaran, and M. T. Ashby, "Conformations of Saturated Six-Membered Ring Phosphorus Heterocycles. 2-Aryl-1,3,2λ^5-oxazaphosphorinanes", *J. Am. Chem. Soc.*, *110*, 7119-7127, **1988**.

9. G. Erker, U. Dorf, R. Lecht, M. T. Ashby, M. Aulbach, R. Schlund, C. Krüger, and R. Mynott, "Metallacyclic Metaloxycarbene Complexes from 1,2-Didehydrobenzene Group 4 Metallocenes and Metal Carbonyls", *Organometallics*, *8*, 2037-2044, **1989**.

10. M. T. Ashby, "Concerning the Spatial Nature of Metal-Thiolate π Bonding", *Comments on Inorganic Chemistry*, *10*, 297-313, **1990**.

11. M. T. Ashby and J. Halpern, "Kinetics and Mechanism of Catalysis of the Asymmetric Hydrogenation of α,β-Unsaturated Carboxylic Acids by Dicarboxylato{2,2'-bis(diphenylphosphino)-1,1'-binaphthyl-ruthenium(II), $[Ru^{II}(BINAP)(O_2CR)_2]$", *J. Am. Chem. Soc.*, *113*, 589-594, **1991**.

12. M. T. Ashby, M. A. Khan, and J. Halpern, "Crystal Structure of an Asymmetric Hydrogenation Catalyst-Substrate Adduct, Δ-Ditiglato{(R)-2,2'-bis(diphenyl-phosphino)-1,1'-binaphthyl-ruthenium(II), $[Ru^{II}(BINAP)(O_2CCMe{=}CHMe)_2]$", *Organometallics*, *10*, 2011-2015, **1991**.

13. M. T. Ashby and Z. Li, "Synthesis and Molecular Structure of an Iminophosphide/Phosphinoamide Anion: $[Li(PhNPPh_2)(OEt_2)]_2$", *Inorg. Chem.*, *31*, **1992**, 1321-1322.

14. M. T. Ashby, G. N. Govindin, and A. K. Grafton, "Kinetics and Mechanism of the Facile Diastereomeric Isomerization of a Low-Spin Tris(bidentate)ruthenium(II) Complex Bearing a Misdirected Bipyridyl Ligand: Δ/Λ-(δ/λ-1,1' Biisoquinoline)bis(2,2'-bipyridine)ruthenium(II) Bis(hexafluorophosphate)", *Inorg. Chem.*, *32*, 3803-3804, **1993**.

15. M. T. Ashby and N. Sheshtawy, "Barriers to Rotation About the B-X Bonds of Coordinatively Unsaturated Borates and Thioborates R_2BXR' (X=O, S) Are Not Measures of the Relative Strengths of Their B=O and B=S π Bonds", *Organometallics*, *13*, 236-243, **1994**.

16. G. Trinquier and M. T. Ashby, "Structures of Model Phosphinoamide Anions", *Inorg. Chem.*, *33*, 1306-1313, **1994**.

17. M. T. Ashby, G. N. Govindin, and A. K. Grafton, "Metal-Assisted Racemization of the Atropisomers of a 1,1'-Binaphthyl Skeleton via a *Syn* Transition State", *J. Am. Chem. Soc.*, *116*, 4801-4809, **1994**.

18. M. T. Ashby, "Inverse Relationship Between the Kinetic and Thermodynamic Stabilities of the Misdirected Ligand Complexes Δ/Λ-(δ/λ-1,1'-Biisoquinoline)bis(2,2'-bipyridine)metal(II) (Metal = Ruthenium, Osmium)", *J. Am. Chem. Soc.*, *117*, 2000-2007, **1995**.

19. M. T. Ashby, "Synthesis of Amphiphilic Metal-Organics Using Monothiohydro-quinolate, an Ambidentate Ligand that Bears a Hard and a Soft Donor. One- and Two-Dimensional Solid-State Structures of $Fe_2(CO)_6(\mu\text{-}SC_6H_4\text{-}4\text{-}OH)_2\cdot(S)_n$ (S = C_6H_6, n = 1; S = HSC_6H_4-4-OH, n = 2)", *Inorg. Chem*, *34*, 5429-5436, **1995**.

20. A. S. Kowalski and M. T. Ashby, "Protonation of an η^6-Arene-Metal Complex to Yield a Metal-Hydrogen Bond Via an Electrophilic Aromatic Substitution Mechanism", *J. Am. Chem. Soc.*, *117*, 12639-12640, **1995**.

21. P. Wikrent, B. J. Drouin, S. G. Kukolich, J. C. Lilly, M. T. Ashby, W. A. Herman, and W. Scherer, "Measurement of the Structure of Methyltrioxorhenium using Microwave Spectroscopy", *J. Chem. Phys.*, *107*, 2187-2192, **1997**.

22. N. Poetschke, M. Nieger, M. A. Khan, E. Niecke, and M. T. Ashby, "Synthesis and Crystal Structures of New Iminophosphide/Phosphinoamide Anions", *Inorg. Chem.*, *36*, 4087-4093, **1997**.

23. M. T. Ashby, S. S. Alguindigue, and M. A. Khan, "Misdirected π-Donor Ligands: $(\eta^5\text{-}C_5H_5)_2Zr(Cl)(SR)$ with Sterically More Demanding Groups Have Lower Rotational Barriers", *Inorg. Chim. Acta*, *270*, 227-237, **1998**. This is an invited paper that was published in a special issue that was be dedicated to the retirement of Jack Halpern.

24. M. T. Ashby and S. S. Alguindigue, "Modulating the Energetics of Electron Transfer with a Dynamic Misdirected Ligand: A Model for Non-planar Hemes", *J. Inorg. Biochem. , 74, 70-70* **1999**.

25. M. T. Ashby, V. S. Asirvatham, A. S. Kowalski, and M. A. Khan, "Stereoelectronic Factors that Influence Kinetic and Thermodynamic Sites of Protonation of (η^6-Arene)Molybdenum(Phosphine)$_3$ Complexes". *Organometallics*, *18*, 5004-5016, **1999**.

26. S. S. Alguindigue, M. A. Khan, and M. T. Ashby, Kinetics and Mechanism of the Stereochemical Isomerization of Arene-Ruthenium and Osmium Complexes of the Atropisomeric Ligand 1,1'-Biphenyl-2,2'-diamine", *Organometallics*, *18*, 5112-5119, **1999**.

27. V. S. Asirvatham, N. E. Gruhn, D. L. Lichtenberger and M. T. Ashby, "Electronic Factors for Protonation of an Organometallic Molecule. "A Photoelectron Spectroscopy and Electron Paramagnetic Resonance Study of $[(\eta^6\text{-}C_6H_6)Mo(TRIPOD)]^{0/+}$", *Organometallics*, *19*, 2215-2227, **2000**.

28. M. T. Ashby, S. S. Alguindigue, and M. A. Khan, "Kinetic Element Effect for Atropisomerization of an Organometallic Complex of the Misdirected Ligand 1,1'-Biisoquinoline", *Organometallics*, *19*, 547-552, **2000**.

29. D. Nanty, M. Laurent, M. A. Khan, and M. T. Ashby, "(Bis(2-pyridylmethyl)ether)tetracarbonylmolybdenum(0)", *Acta Cryst.*, *C56*, 35-36, **2000**.

30. S. S. Alguindigue, M. A. Khan, and M. T. Ashby, "Synthesis and Molecular Structure of Ruthenium(II) Complexes of the Atropisomeric Ligands 1,1'-Biphenyl-2,2'-diamine and 3,3'-Diamino-2,2'-bipyridine", *Inorg. Chim. Acta*., *310*, 156-162, **2000**.

31. V. S. Asirvatham and M. T. Ashby, "Synthesis of Bis(η^6-Alkylbenzene)-molybdenum by Arene Metathesis", *Organometallics*, *20*, 1687-1688, **2001**.

32. P. K. Das, S. S. Alguindigue, and M. T. Ashby, "Origin of the Inverse Steric Effect for Rotation About the Zr-S Bonds of $(\eta^5\text{-}C_5H_5)_2Zr(Cl)(SR)$", *Can. J. Chem.*, *79*, 809-816, **2001**. This is an invited paper that was published in a special issue that was dedicated to the retirement of Brian James.

33. M. T. Ashby, V. S. Asirvatham, and M. A. Khan, "Comparative Regiochemistry of Protonation of ($\eta^6\text{-}C_6H_5Z$)(1,1',1''-tris(2-diphenylphosphino-methyl)ethane)Mo(0) (Z = H, Me and $SiMe_3$)", *J. Organomet. Chem.*, *628*, 275-279, **2001**.

34. M. T. Ashby, J. D. Schwane, S. S. Alguindigue, and T. A. Daniel, "Regular and Inverse Secondary Kinetic Enthalpy Effects (KHE) for the Rate of Inversion of Thioether and 1,1'-Biisoquinoline Complexes of Ruthenium and Osmium", *Inorg. Chem.*, *40*, 6643-6650, **2001**.

35. M. T. Ashby and Justin D. Schwane, "Reaction of Nitroprusside and Thiolate Revisited: Effective Outer-Sphere Reduction", *J. Inorg. Biochem.*, *86*, 132-132, **2001**.

36. D. G. McGuire, M. A. Khan, and M. T. Ashby, "The Discontinuum Between a Thiolate and a Thiol Ligand", *Inorg. Chem.* , *41*, 2202-2208, **2002**.

37. J. D. Schwane and M. T. Ashby, "FTIR Investigation of the Intermediates Formed in the Reaction of Nitroprusside and Thiolates", *J. Am. Chem. Soc.*, *124*, 6822-6823, **2002**.

38. M. T. Ashby and H. Aneetha “Reactive Sulfur Species: Aqueous Chemistry of Sulfenyl Thiocyanates”, *J. Am. Chem. Soc.*, *126*, 10216-10217, **2004**.

39. M. T. Ashby, A. C. Carlson, and M. J. Scott, “Redox Buffering of Hypochlorous Acid by Thiocyanate in Physiologic Fluids”, *J. Am. Chem. Soc.*, *126*, 15976-15977, **2004**.

40. M. T. Ashby, H. Aneetha, A. C. Carlson, M. J. Scott, and J. L. Beal, “Bioorganic Chemistry of Hypothiocyanite”, *Phosphorus, Sulfur, and Silicon, and Related Elements*, *180*, 1-6, **2005**.

41. Péter Nagy and M. T. Ashby, “Reactive Sulfur Species: Kinetics and Mechanism of the Oxidation of Cystine by Hypochlorous Acid to Give N,N’-Dichlorocystine”, *Chem Res. Toxicol.*, *18*, 919-923, **2005**.

Publications in press:

42. Michael T. Ashby and Péter Nagy, “On the Kinetics and Mechanism of the Reaction of Cysteine and Hydrogen Peroxide in Aqueous Solution”, *J. Pharmaceutical Sci..*, *94*, ???-???, **2005**.

Manuscripts accepted for publication subject to revision:

None

Manuscripts submitted for publication:

43. Michael T. Ashby and Rachael C. Mallo, “AqpZ-Mediated Water Permeability in Escherichia coli Measured by Stopped-Flow Spectroscopy”, *J. Bacteriol.*, *187*, ???-???, **2005**.

Manuscripts in preparation:

44. Péter Nagy, Jennifer C. Beal, and Michael T. Ashby, “Redox Buffering of Phagolytic Killing Agents: Kinetics and Mechanism of the Reaction of Hypohalous Acids (HOX; X=Cl, Br) with Thiocyanate”, *Inorg. Chem.*, *44*, ???-???, **2005**.

45. Michael T. Ashby and Jennifer C. Beal, “Kinetics and Mechanism of the Oxidation of Human Serum Albumin by Hypochlorous Acid”, *J. Am. Chem. Soc.*, *127*, ???-???, **2005**.

46. Michael T. Ashby and Julie D. Becker, “Turbulent Mixing Methods are Required for the Testing of Hypochlorous Acid Using Bacterial Suspension Methods”, *Antimicrobial Agents and Chemotherapy*, *49*, ???-???, **2005**.

OTHER PUBLICATIONS

Monographs:

1. M. T. Ashby (some sections co-authored by B. R. James), "Sections 14.3.2-14.3.3.6, Hydrogenation Reactions", *Inorganic Reactions and Methods*, A. Norman, ed., VCH Publishers, Volume 16, pp. 65-102, 1993.

Book Reviews:

1. Brooks/Cole Publishing Company, "Inorganic Chemistry", an invited double-blind critical review of a manuscript for a textbook. The textbook has since been published and my efforts are acknowledged: J. R. Bowser, "Inorganic Chemistry", Brooks/Cole: Belmont, CA, 1993.

Patents:

1. Provisional Patent Pending: “Efficient Synthesis of Hypothiocyanite”, University of Oklahoma, April, 2004.

PAPERS PRESENTED AT MEETINGS

1. M. T. Ashby and D. L. Lichtenberger*, "Preparation and Molecular Structure of 1,4,7-Trithiacyclononane Molybdenum Tricarbonyl", 183rd National Meeting of the American Chemical Society, Las Vegas, Nevada, March 28, 1982.

2. M. T. Ashby and J. H. Enemark*, "Reactions of $CpFe(CO)_2SR$ (R = alkyl, aryl, vinyl) Compounds with Electrophiles", XIth International Conference on Organometallic Chemistry, Pine Mountain, Georgia, October 10, 1983.

3. M. T. Ashby and J. H. Enemark*, "Cycloaddition of Alkene and Alkynes to Triatomic Organometallic Fragments", XIIth International Conference on Organometallic Chemistry, Vienna, Austria, September 9, 1985.

4. M. T. Ashby, J. H. Enemark*, and D. L. Lichtenberger, "The Nature of Thiolate Lone Pair Orbital Interactions with Transition Metal d-Orbitals", XIIth International Conference on Organometallic Chemistry, Vienna, Austria, September 13, 1985.

5. M. T. Ashby and G. Erker*, "A Carboxylate Synthon in Wittig-Type Chemistry. Coupling of $(L_nZrO)(R)C=W(CO)_5$ Carbenes and Phosphorus Ylides to Give $L_nZr(OC(R)=C(R')(R''))$ Enolates", VIIth FECHEM Conference on Organometallic Chemistry, Toledo, Spain, August 30, 1987.

6. M. T. Ashby* and Zhong Li, "The Nature of P-N Multiple Bonding Revisited. Synthesis, Molecular and Electronic Structure of an Imidophosphide/Phosphinoamide Anion", Status and Future of Polyphosphazenes, Research Triangle Park, North Carolina, March 15-18 1992.

7. M. T. Ashby* and Zhong Li, "The First Structurally Characterized Imidophosphide/ Phosphinoamide Anion", 203rd National Meeting of the American Chemical Society, San Francisco, California, April 5-10, 1992.

8. M. T. Ashby*, "Lamellar Solid-State Organization with Amphiphilic Metal-Organic Compounds", 29th International Conference on Coordination Chemistry, Lausanne, Switzerland, July 19-24, 1992, invited section lecture.

9. M. T. Ashby*, G. N. Govindan, and A. K. Grafton, "Kinetics and Mechanism of the Facile Diastereomeric Isomerization of a Tris(bidentate)ruthenium(II) Complex Bearing a Misdirected Bipyridyl Ligand", 17th NSF National Organometallic Chemistry Workshop, New Orleans, Louisiana, May 13-16, 1993, invited.

10. M. T. Ashby*, G. N. Govindan, and A. K. Grafton, "Kinetics and Mechanism of the Facile Diastereomeric Isomerization of a Tris(bidentate)ruthenium(II) Complex Bearing a Misdirected Bipyridyl Ligand", Organometallic Gordon Conference, Salve Regina College, Providence, Rhode Island, July 11-16, 1993.

11. M. T. Ashby*, G. N. Govindan, and A. K. Grafton, "Kinetics and Mechanism of the Facile Diastereomeric Isomerization of a Tris(bidentate)ruthenium(II) Complex Bearing a Misdirected Bipyridyl Ligand", 38th Annual Pentasectional Meeting Oklahoma Sections of the American Chemical Society, August 7, 1993.

12. M. T. Ashby*, G. N. Govindan, and A. K. Grafton, "Kinetics and Mechanism of the Facile Diastereomeric Isomerization of a Tris(bidentate)ruthenium(II) Complex Bearing a Misdirected Bipyridyl Ligand", 206th National Meeting of the American Chemical Society, Chicago, Illinois, August 22-27, 1993, invited.

13. M. T. Ashby* and N. A. Sheshtawy, "Hybridization Effects and the Stabilization of Coordinatively Unsaturated Organo-Borates and -Thioborates by π Donation", 206th National Meeting of the American Chemical Society, Chicago, Illinois, August 22-27, 1993.

14. M. T. Ashby*, "Rabbit Ears Do Not Exist", Plenary Lecture, 29th ACS-SA Meeting-in Miniature, University of Tulsa, April 9, 1994, invited plenary lecture.

15. M. T. Ashby*, G. N. Govindin, and A. K. Grafton, "Inverse Relationship Between the Kinetic and Thermodynamic Stabilities of Some Misdirected Ligand Complexes", 39th Annual Pentasectional Meeting Oklahoma Sections of the American Chemical Society, Tulsa, Oklahoma, August 7, 1994.

16. M. T. Ashby*, "Inverse Relationship Between the Kinetic and Thermodynamic Stabilities of Some Misdirected Ligand Complexes", 208th ACS National Meeting, Washington D.C., August 21-25, 1994.

17. A. S. Kowalski and M. T. Ashby*, "Encapsulation of a Transition Metal Hydride", 39th Annual Pentasectional Meeting Oklahoma Sections of the American Chemical Society, Tulsa, Oklahoma, September 10, 1994.

18. A. S. Kowalski and M. T. Ashby*, "Solid-State and Solution Structures of Some New Protonated Transition Metal Complexes", 209th National Meeting of the American Chemical Society, Anaheim, California, April 2-7, 1995.

19. A. S. Kowalski and M. T. Ashby*, "Solid-State and Solution Structures of Some New Protonated Transition Metal Complexes", 40th Annual Pentasectional Meeting Oklahoma Sections of the American Chemical Society, Norman, Oklahoma, April 29, 1995.

20. M. T. Ashby, G. N. Govindan, A. K. Grafton, and S. L. Stanislav, "Dynamic Properties of Misdirected Ligands", 211th National Meeting of the American Chemical Society, New Orleans, Louisiana, March 24, 1996. An invited presentation at a symposium on M-N, M-S and M-P Complexes.

21. M. T. Ashby, “Indirect Protonation of Transition Metal Centers”, Gordon Conference on Mechanistic Inorganic Chemistry, Ventura, California, March 2-7, 1997.

22. M. T. Ashby, “Indirect Protonation of Transition Metal Centers”, National Science Foundation Inorganometallic Workshop, Santa Fe, New Mexico, June 20-22, 1997.

23. M. T. Ashby, “Indirect Protonation of Transition Metal Centers”, Fast Reactions in Solution, Copenhagen, Denmark, September 1-4, 1997.

24. M. T. Ashby and D. G. McGuire, "Regulatory Function of Hydrogen Bonding in Iron-Thiolate Proteins: Electrophilic Reactions of the Model System $(\eta^6\text{-}C_6H_6)Fe(L)_2SR$", 53rd Southwest Regional Meeting of the American Chemical Society, Tulsa, OK, October 1-3, 1997.

25. M. T. Ashby and S. S. Alquindique, and M. A. Khan, " Misdirected π-Donor Ligands: $(\eta^5\text{-}C_5H_5)_2Zr(Cl)(SR)$ with Sterically More Demanding R-Groups Have Lower Rotational Barriers", 53rd Southwest Regional Meeting of the American Chemical Society, Tulsa, OK, October 1-3, 1997.

26. N. Poetschke, M. Nieger, M. A. Khan, E. Niecke, and M. T. Ashby, “Synthesis and Crystal Structures of New Iminophosphide/Phosphinoamide Anions”, Second International Conference on the Chemistry of the Alkali and Alkaline Earth Metals ("ALKCHEM-2"), Erlangen, Germany, September 17-20, 1997.

27. M. T. Ashby, "The Effect of Ligand Misdirection on Intimate Mechanisms", Inorganic Reaction Mechanisms Meeting 97 (of the Royal Society of Chemistry), Debrecen, Hungary, January 1-10, 1998. An invited paper.

28. M. T. Ashby, "Interligand Synergistic Bonding as a Result of Ligand Misdirection", 215th National Meeting of the American Chemical Society, Dallas, TX, March 29, 1998.

29. D. G. McGuire and M. T. Ashby, "Brønsted and Redox Chemistry of Electron-Rich Iron-Thiolate Complexes", 215th National Meeting of the American Chemical Society, Dallas, TX, March 29, 1998.

30. J. C. Lilly and M. T. Ashby, "Synthesis, Molecular Structure, and Atropisomerization of the Misdirected Ligand Complex $\delta/\lambda\text{-}[(\eta^6\text{-}C_6H_6)Ru(Cl)(1,1'\text{-Biisoquinoline})]^+$", 215th National Meeting of the American Chemical Society, Dallas, TX, March 29, 1998.

31. J. D. Schwane and M. T. Ashby, "Directed=[Misdirected]†=Directed Ligand Isomerization: Inversion at the Sulfur Atom of Thioether Complexes of Ru and Os", 215th National Meeting of the American Chemical Society, Dallas, TX, March 29, 1998.

32. V. S. Asirvatham and M. T. Ashby, "Reactions of Electrophiles with Electron-Rich $(\eta^6\text{-}C_6H_5R)Mo(TRIPOD)$ [R = H, CH_3, $Si(CH_3)_3$, TRIPOD = 1,1,1-Tris(diphenylphosphino-methyl)ethane]", 215th National Meeting of the American Chemical Society, Dallas, TX, March 29, 1998.

33. S. S. Alquindique and M. T. Ashby, "Rotational Barriers about the M-S Bonds of Main Group and Transition Metal Thiolates", 215th National Meeting of the American Chemical Society, Dallas, TX, March 29, 1998.

34. S. S. Alguindigue, M. A. Khan and M. T. Ashby, “Mechanism of Stereoisomerization of Atropisomeric Ligand Complexes of Ru and Os", 217th National Meeting of the American Chemical Society, Anaheim, CA, March 21, 1999.

35. I. A. Manke, S. S. Alguindigue, M. A. Khan, M. T. Ashby, “Synthesis, Crystal Structures, and Dynamic Properties of Misdirected Ligand Complexes of Rh and Ir”, 217th National Meeting of the American Chemical Society, Anaheim, CA, March 21, 1999.

36. V. S. Asirvatham, A. S. Kowalski, N. E. Gruhn, D. L. Lichtenberger and M. T. Ashby, “Stereoelectronic Factors that Govern Kinetic and Thermodynamic Sites of Protonation of Some Organometallic Complexes" Gordon Conference on Mechanistic Inorganic Chemistry, Ventura, California, February 28 - March 5, 1999.

37. M. T. Ashby, “Modulating the Energetics of Electron Transfer with a Dynamic Misdirected Ligand: a Model for Non-planar Hemes”, International Conference for Bioinorganic Chemistry (ICBIC) 99, Minneapolis, Minnesota, July 11, 1999.

38. V. S. Asirvatham, A. S. Kowalski, N. E. Gruhn, D. L. Lichtenberger and M. T. Ashby, “Stereoelectronic Factors that Govern Kinetic and Thermodynamic Sites of Protonation of Some Organometallic Complexes", Fast Reactions in Solution (FRIS) 99, Royal Society of Chemistry, Lisbon, Portugal, August 30, 1999. I gave one of five invited planary lectures.

39. V. S. Asirvatham, A. S. Kowalski, N. E. Gruhn, D. L. Lichtenberger and M. T. Ashby, “Stereoelectronic Factors that Govern Kinetic and Thermodynamic Sites of Protonation of Some Organometallic Complexes", Fast Reactions in Solution (FRIS) 99, Royal Society of Chemistry, Lisbon, Portugal, August 30, 1999. I gave one of five invited planary lectures.

40. Justin D. Schwane and M. T. Ashby, “Reduction of Nitroprusside by Thiols Revisted", Gordon Research Conference on Nitric Oxide Chemistry, Ventura, California, February 4 - 9, 2001.

41. Justin D. Schwane and M. T. Ashby, “Reduction of Nitroprusside by Thiols Revisted", Gordon Research Conference on Inorganic Reaction Mechanisms, Ventura, California, February 25 – March 2, 2001.

42. M. T. Ashby and Justin D. Schwane, “Reduction of Nitroprusside by Thiols Revisted", 10^{th} International Conference for Bioinorganic Chemistry (ICBIC), Florence, Italy, August 26-31, 2001.

43. Michael T. Ashby and Justin D. Schwane, “FTIR Investigation of the Intermediates Formed in the Reaction of Nitroprusside and Thiolates”, 12th International Symposium on the Organic Chemistry of Sulfur, Flagstaff, AZ, July 14-19, 2002.

44. Nadine E. Gruhn, Michael T. Ashby, John H. Enemark, Frank E. Inscore, Hemant K. Joshi, Dennis L. Lichtenberger, Kristie R. Ruddick, Wolfdieter A. Schenk, and Barry L. Westcott, “Organometallic and Bioorganic Metal–Thiolate Bonding: Insight from Gas-Phase Photoelectron Spectroscopy”, 20th International Symposium on the Organic Chemistry of Sulfur, Flagstaff, AZ, July 14-19, 2002.

45. Dennis L. Lichtenberger, Fraser-Gaston, John L. Hubbard, Nadine E. Gruhn, Michael T. Ashby, Ruddick, Schenk, and John H. Enemark, “Fe-ligand bonding and electron distributions related to

hydrogenases: Photoelectron spectroscopy of organometallic molecules containing Fe-CO, Fe-CN, and Fe-SR functional groups", 224th National Meeting of the American Chemical Society, Boston, MA, August 18, 2002.

46. Michael T. Ashby, Ruddick, Schenk, and John H. Enemark, "Fe-ligand bonding and electron distributions related to hydrogenases: Photoelectron spectroscopy of organometallic molecules containing Fe-CO, Fe-CN, and Fe-SR functional groups", 224th National Meeting of the American Chemical Society, Boston, MA, August 18, 2002.

47. Ashby, M. T.; Forfeke, B. F., "Kinetics and mechanism of the reaction of Glutathione(GSH) with Cyanate", Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 2003, CHED-163.

48. Forfeke, B.; Ji, J.; Ashby, M. T., "Kinetics and mechanism of glutathione conjugation of cyanate", Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 2003, CHED-677.

49. Ashby, M. T., Aneetha, H., " Reactive Sulfur Species: Reactions of Hypothiocyanite", Abstracts of Papers, Eleventh International Conference on Biological Inorganic Chemistry, Cairns, Australia, July 19-23, 2003.

50. Ashby, M. T.; Carlson, A.; Jones, M.; Scott, M., "Reactive sulfur species: The antimicrobial hypothiocyanite and related compounds", Abstracts, 59th Southwest Regional Meeting of the American Chemical Society, Oklahoma City, OK, United States, October 25-28 2003.

51. Ashby, M T..; Aneetha, H.; Carlson, A.; Jones, M.; Scott, M.; Gutshall, J., "Bioorganic Chemistry of Hypothiocyanite", 21st International Symposium on the Organic Chemistry of Sulfur, Madrid, Spain, July 4-9, 2004, invited talk.

52. Ashby, M. T., "Hypothiocyanite: An Endogenous Non-Immunological Biocide of Human Exocrine and Plasmic Fluids", Pacifichem 2005, Symposium: Biocides Old and New: Where Chemistry and Microbiology Meet, Honolulu, Hawaii, December 15-20, 2005, invited speaker.

53. Nagy, P.; Ashby, M. T., "Secondary Reactive Oxygen Species That Are Derived from Hypochlorite (Bleach)", Pacifichem 2005, Symposium: Biocides Old and New: Where Chemistry and Microbiology Meet, Honolulu, Hawaii, December 15-20, 2005.

54. Beal, J. L.; Ashby, M. T., "Thiocyanate as an Antimicrobial and Antioxidant in Human Health", Pacifichem 2005, Symposium: Chemistry and Biochemistry of Antioxidative Phytochemicals, Honolulu, Hawaii, December 15-20, 2005.

55. Ashby, M. T., "Redox Chemistry of Biological Reactive Sulfur Species", 22st International Symposium on the Organic Chemistry of Sulfur, Saitama, Japan, August 20-25, 2006, invited speaker.

LEADERSHIP ROLES AT MEETINGS

Organizer, discussion leader, and speaker at the symposium on "Kinetics and Reaction Mechanisms" at the 206th ACS National Meeting, Chicago, IL, August 22-27, 1993.

Organizer, discussion leader, and speaker at the symposium on "General Transition Metal - I" at the 208th ACS National Meeting, Washington D.C., August 21-25, 1994.

Organizer and General Chair, 40th Oklahoma Pentasectional American Chemical Society Meeting, Norman, Oklahoma, April 29, 1995.

Discussion leader , Inorganic Reaction Mechanisms Meeting 97 (of the Royal Society of Chemistry), Debrecen, Hungary, January 1-10, 1998.

Organizer and General Chair, 2003 Southwest Regional Meeting of the American Chemical Society Meeting, Oklahoma City, Oklahoma, October, 2003.

INVITED COLLOQUIA

1. Institut für Anorganische Chemie, Phillips Universität Marburg, West Germany, "Heterometallacyclic Chemistry", August 12, 1986 at the invitation of Kurt Dehnicke.

2. Anorganisch-Chemisches Institut, Technischen Universität München, West Germany, "Heterometallacyclic Chemistry", November 7, 1986 at the invitation of Wolfgang A. Herrmann.

3. Institut für Anorganische Chemie, Universität Bochum, West Germany "Metal-Thiolate Bonding", May 8, 1987 at the invitation of Karl Weighart.

4. Gorlaeus Laboratories, Department of Chemistry, Leiden University, The Netherlands, "Metal-Thiolate Bonding", May 11, 1987 at the invitation of Jan Reedijk.

5. Hahn-Meitner-Institut, Berlin, West Germany "Metal-Thiolate Bonding", October 28, 1987 at the invitation of Dr. Werner Jaegermann.

6. Central Research, Dow Chemical Co., Midland, Michigan, "Organometallic Chemistry of Heterometallacyclic Compounds", April 5, 1989.

7. Chemistry Department, East Texas State University, Commerce, Texas, "Kinetics and Mechanism of Asymmetric Catalysis by $[Ru^{II}(BINAP)(O_2CR)_2]$", February 7, 1991 at the invitation of Prof. Ken R. Ashley.

8. Ethyl Corporation, Richmond Virginia, "Homogeneous Asymmetric Hydrogenation", April 24, 1992 at the invitation of Dr. George P. Stahly.

9. Laboratoire de Physique Quantique, Universite' Paul Sabatier, Toulouse, France, "Low-Dimensional Materials from Amphiphilic Metal-Organic Compounds", July 17, 1992 at the invitation of Dr. G. Trinquier.

10. Department of Chemistry, Texas Christian University, Fort Worth, Texas, "Low-Dimensional Metal-Organic Materials", September 18, 1992 at the invitation of Wess H. Watson.

11. Phillips Petroleum Company, Bartlesville, OK, "The Role of Mechanistic Studies in the Design and Optimization of Homogeneous Asymmetric Hydrogenation Catalysts", February 19, 1993 at the invitation of Donald Lauffer.

12. Department of Chemistry, University of North Texas, Denton, Texas, "Nature of Metal-Thiolate π Bonding and Antibonding", February 26, 1993 at the invitation of Prof. L. J. Theriot.

13. Department of Chemistry, Utah State University, Logan, Utah, "Rabbit Ears Don't Exist", September 27, 1994, at the invitation of John Hubbard.

14. Department of Chemistry, University of Utah, Salt Lake City, Utah, "Rabbit Ears Don't Exist", September 28, 1994 at the invitation of John Gladysz.

15. Department of Chemistry, University of Arizona, Tucson, Arizona, "Rabbit Ears Don't Exist", September 29, 1994, at the invitation of John Enemark.

16. Department of Chemistry, Kansas State University, Manhattan, Kansas, "Rabbit Ears Don't Exist", October 6, 1994, at the invitation of Charles Riordan.

17. Department of Chemistry, University of Kansas, Lawrence, Kansas, "Rabbit Ears Don't Exist", October 7, 1994, at the invitation of Joseph Heppert.

18. Department of Chemistry, University of Wisconsin, Madison, Wisconsin, "Rabbit Ears Don't Exist", February 6, 1995, at the invitation of Clark Landis.

19. Department of Chemistry, Indiana University, Bloomington, Indiana, "Rabbit Ears Don't Exist", February 9, 1995, at the invitation of Ken Caulton.

20. Department of Chemistry, University of Chicago, Chicago, Illinois, "Rabbit Ears Don't Exist", February 10, 1995, at the invitation of Jack Halpern.

21. Department of Chemistry, Colorado State University, Fort Collins, "Rabbit Ears Don't Exist", Colorado, March 21, 1995 at the invitation of Jack Norton.

22. Department of Chemistry, University of Colorado, Boulder, Colorado, "Rabbit Ears Don't Exist", March 23, 1995 at the invitation of Arlan Norman.

23. Department of Chemistry, University of Wyoming, Laramie, Wyoming, "Rabbit Ears Don't Exist", March 24, 1995 at the invitation of Dean Roddick.

24. Chemistry Department, University of Houston, Houston, "Rabbit Ears Don't Exist", Texas, April 18, 1995 at the invitation of Randy Thummel.

25. Department of Chemistry, Texas A&M University, College Station, Texas, "Rabbit Ears Don't Exist", April 19, 1995 at the invitation of Marcetta Darensbourg.

26. Department of Chemistry, University of North Texas, Denton, Texas, "Rabbit Ears Don't Exist", May 5, 1995 at the invitation of William Acree, Jr.

27. Department of Chemistry, University of Texas at Arlington, Texas, “Stereochemistry of Misdirected Ligand Complexes”, October 11, 1996 at the invitation of Fred MacDonnell.

28. Department of Chemistry, University of Arkansas, Arkansas, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, March 31, 1997 at the invitation of Neil Allison.

29. Department of Chemistry, University of Illinois at Chicago, Illinois, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, April 29, 1997 at the invitation of Donald Wink.

30. Department of Chemistry, Technische Universität Berlin, Germany, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, September 9, 1997, as part of the Koordination Graduiertenkolleg "Synthetische, Mechanistische und Reaktionstechnische Aspekte von Metallkatalysatoren" at the invitation of Herbert Schumann.

31. Chemistry Department, Stanford University, "Dynamic Properties of Misdirected Ligands", February 14, 1999, at the invitation of Edward Solomon.

32. Department of Chemistry, University of California at Stanta Barbra, California, "Stereoelectronic Factors the Govern Kinetic and Thermodynamic Protonation of Some Organometallics", April 14, 1999, at the invitation of Peter Ford.

33. Northcentral ACS Section of the American Chemical Society (Phillips Petroleum), “Protonation of Organometallics. Complicated Simple Reactions”, Bartlesville, Oklahoma, December 2, 1999.

34. Department of Chemistry, Texas Christian University, “Protonation of Organometallics. Complicated Simple Reactions”, Fort Worth, Texas, February 24, 2000, at the invitation of Tracy Hanna.

35. Department of Chemistry, Hendrix College, “Rabbit Ears Don’t Exist”, Conway, Arkansas, January 15, 2001, at the invitation of Randall Kopper.

36. Department of Chemistry, Wichita State University, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, Wichita, Kansas, March 14, 2001, at the invitation of Ram Singhal.

37. Department of Chemistry, Oklahoma State University, “Rabbit Ears Don’t Exist”, Stillwater, Oklahoma, October 25, 2001, at the invitation of Mario Rivera.

38. Department of Chemistry and Biochemistry, University of Delaware, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, Newark, Delaware, March 19, 2002, at the invitation of Charlie Riordan.

39. Department of Chemistry and Biochemistry, University of Pennsylvania, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, University City, Pennsylvania, March 21, 2002, at the invitation of Patrick Walsh.

40. Department of Chemistry, University of Louisville, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, Louisville, Kentucky, October 18, 2002, at the invitation of Craig Grapperhaus.

41. Department of Chemistry and Physics, Southwestern Oklahoma State University, “Rabbit Ears Don’t Exist”, Weatherford, OK, February 13, 2003, at the invitation of Stephanie Wickham.

42. Department of Chemistry, University of Wisconsin-Milwaukee, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, Milwaukee, Wisconsin, April 28, 2003, at the invitation of Andy Pacheco.

43. Department of Chemistry, Australian National University, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, Canberra, Australia, July 28, 2003, at the invitation of Mark Humphrey.

44. Department of Chemistry, Monash University, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, Melbourne, Australia, July 31, 2003 at the invitation of Don McNaughton.

45. Department of Chemistry, University of Melbourne, “Bent Metal-Ligand Bonds: Models to Metalloproteins”, Melbourne, Australia, August 4, 2003 at the invitation of Charles Young.

45. University of Oklahoma Health Sciences Center, “Defensive Roles of Thiocyanate in the Oral Cavity”, Oklahoma City, OK, September 17, 2004 at the invitation of Joseph Ferretti.

46. Department of Chemistry, Fort Hays State University, “There's Bleach in My Blood!!!!”, Hays, KS, March 14, 2004 at the invitation Eddie Olmstead.

47. Department of Chemistry, University of Missouri-St. Louis, “There's Bleach in My Blood!!!!”, St. Louis, MO, April 18, 2004 at the invitation of Lawrence Barton.