

WILLIAM A. HOWARD, Ph. D.

Associate Professor of Chemistry
Department of Chemistry & Biochemistry
University of Alaska Fairbanks
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RESEARCH INTERESTS

- Creation and development of novel vanadium complexes as insulin mimics for type 2 diabetics.
- Synthesis and characterization of novel coordination compounds of rhodium.

TEACHING INTERESTS

- Undergraduate and Graduate Level Inorganic Chemistry.
- Specialty Topic in Inorganic Chemistry (*e.g.*, Nanochemistry, Bioinorganic chemistry).
- General Chemistry.
- Academic Advising

EDUCATION

Postdoctoral Research Associate
University of California, Berkeley

October, 1995 - May, 1997
Berkeley, CA

Advisor: Prof. Robert G. Bergman

Postdoc Thesis: "Basic Studies of the Chemistry of $[(\eta^5\text{-C}_5\text{Me}_5)\text{Pt(IV)}]$ Compounds and Photochemical Studies of Some t-Butylperoxo Derivatives of Platinum and Palladium"

Ph. D., Inorganic Chemistry
Columbia University

September, 1995
New York, NY

Advisor: Prof. Gerard Parkin

Ph. D. Thesis: "Synthetic and Reactivity Studies of Permethylzirconocene Complexes with Terminal Chalcogenido Ligands"

William A

M. Phil., Inorganic Chemistry
Columbia University

March, 1994
New York, NY

M. A., Inorganic Chemistry
Columbia University

October, 1991
New York, NY

B. S., Major, Chemistry
cum laude Grade Point Average, 3.49 / 4.00
Tulane University

May, 1990
New Orleans, LA

CAREER EXPERIENCE

Assistant Professor of Chemistry
University of Alaska Fairbanks

August, 2001 – Present
Fairbanks, AK

Visiting Assistant Professor
University of Toledo

August, 1999 – May, 2001
Toledo, OH

Associate Research Chemist
Shell Chemical Company

June, 1997 - May, 1999
Houston, TX

- Developed and commercialized new distillate hydrotreating catalyst.
- Extensive experience in synthesizing, characterizing, and testing heterogeneous catalysts for the petroleum industry.

MEMBERSHIP

American Chemical Society

PUBLICATIONS

1. “*Mer*-[MCl₃(Me₂pzH)₃] (M = Rh, Ir; Me₂pzH = 3,5-Dimethylpyrazole): X-Ray Structures, Spectroscopic Properties, and Density Functional Theory (DFT) Calculations.” Cushing, G. W.; Howard, W. A.; Pang, K. *J. Mol. Struct. (In Press)*.

2. "Aqueous Acid – Base Chemistry Involving Dioxovanadium(V) Complexes of 2,6-Pyridinedimethanol, and the X-Ray Structures of $\text{Na}[\text{VO}_2\{2,6-(\text{OCH}_2)_2\text{NC}_5\text{H}_3\}] \cdot 4 \text{H}_2\text{O}$ and $[\text{1-H-2,6-(HOCH}_2)_2\text{NC}_5\text{H}_3]^+\text{Cl}^-$." Fites, R. J.; Yeager, A. T.; Sarvela, T. L.; Howard, W. A.; Zhu, G.; Pang, K. *Inorg. Chim. Acta* **2006**, 359, 248-56.
3. "The Relationship between Balancing Reactions and Reaction Lifetimes: A Consideration of the Potassium – Argon Radiometric Method for Dating Minerals." Howard, W. A. *J. Chem. Educ.* **2005**, 82, 1094-98.
4. "Syntheses and Characterization of Some Chloro, Methoxy, and Mercapto Derivatives of $[\text{Ru}(\eta^{2-2,2'}\text{-bipyridine})_3]^{2+} 2 \text{PF}_6^-$: Crystal and Molecular Structures of $[\text{Ru}(\eta^{2-2,2'}\text{-bipyridine})_2(\eta^{2-4,4'}\text{-(X)}_2\text{-2,2'}\text{-bipyridine})]^{2+} 2 \text{PF}_6^-$ (X = Cl, OCH₃)." Hansen, Lars E.; Glowacki, Emily R.; Arnold, Danielle L.; Chi, Bongchu; Bernt, George J.; Fites, Raena J.; Freeburg, Ruth A.; Rothschild, Roger F. N.; Krieg, Maggie C.; Howard, William A.; Tanski, Joseph M. *Inorg. Chim. Acta* **2003**, 348, 91-96.
5. "The Synthesis of Olefin, Carbonyl, and Thiolate Complexes of Platinum (IV) in the $[(\eta^5\text{-C}_5\text{Me}_5)\text{Pt}(\text{IV})]$ System. Crystal and Molecular Structure of $(\eta^5\text{-C}_5\text{Me}_5)\text{PtMe}_2[\text{S}(p\text{-MeC}_6\text{H}_4)]$." Howard, William A.; Bergman, Robert G. *Polyhedron* **1998**, 17, 803-10.
6. "Terminal Chalcogenido Complexes of Zirconium: Syntheses and Reactivity of $\text{Cp}^*_2\text{Zr}(\text{E})(\text{NC}_5\text{H}_5)$ (E = O, S, Se, Te)." Howard, William A.; Trnka, Tina, M.; Waters, Marcey; Parkin, Gerard *J. Organomet. Chem.* **1997**, 528, 95-121.
7. "Syntheses of the Phenylchalcogenolate Complexes $(\eta^5\text{-C}_5\text{Me}_5)_2\text{Zr}(\text{EPh})_2$ (E = O, S, Se, Te) and $(\eta^5\text{-C}_5\text{H}_5)_2\text{Zr}(\text{OPh})_2$: Structural Comparisons within a Series of Complexes Containing Zirconium – Chalcogen Single Bonds." Howard, William A.; Trnka, Tina M.; Parkin, Gerard *Inorg. Chem.* **1995**, 34, 5900-09.
8. "Synthesis and Structure of $(\eta^5\text{-C}_5\text{Me}_5)_2\text{Zr}(\text{Se})(\text{CO})$, a Nonclassical d^0 Zirconium Carbonyl Complex." Howard, William A.; Trnka, Tina M.; Parkin, Gerard *Organometallics* **1995**, 14, 4037-39.
9. "Non-Classical Carbonyl Complexes of Zirconium: the Syntheses, Characterization, and Reactivities of $(\eta^5\text{-C}_5\text{Me}_5)_2\text{Zr}(\eta^2\text{-E}_2)(\text{CO})$ (E = S, Se, Te)." Howard, William A.; Parkin, Gerard; Rheingold, Arnold L. *Polyhedron* **1995**, 14, 25-44.
10. "Multiple Bonds between Hafnium and the Chalcogens: Syntheses and Structures of the Terminal Chalcogenido Complexes $(\eta^5\text{-C}_5\text{Me}_4\text{R})_2\text{Hf}(\text{E})(\text{NC}_5\text{H}_5)$ (E = O, S, Se, Te)." Howard, William A.; Parkin, Gerard *J. Organomet. Chem.* **1994**, 472, C1-C4.
11. "Terminal Oxo, Sulfido, Selenido, and Tellurido Complexes of Zirconium, $(\eta^5\text{-C}_5\text{Me}_4\text{R})_2\text{Zr}(\text{E})(\text{NC}_5\text{H}_5)$: Comparison of Terminal Zr–E Single and Zr=E Double Bond Lengths." Howard, William A.; Parkin, Gerard *J. Am. Chem. Soc.* **1994**, 116, 606-15.

12. "Terminal Zirconium Oxo Complexes: Synthesis, Structure, and Reactivity of $(\eta^5\text{-C}_5\text{Me}_4\text{R})_2\text{Zr}(\text{O})(\text{NC}_5\text{H}_4\text{R}')$." Howard, William A.; Waters, Marcey; Parkin, Gerard *J. Am. Chem. Soc.* **1993**, *115*, 4917-18.
13. "Interconversion of Hydrosulfido and Sulfido Ligands in Permethylzirconocene Complexes." Howard, William A.; Parkin, Gerard *Organometallics* **1993**, *12*, 2363-66.
14. "Hydrogen Bonding of Water to the Hydroxo Ligands of $\text{Cp}^*_2\text{Zr}(\text{OH})_2$: Implications for Proton and Oxygen Exchange Processes: the Crystal and Molecular Structure of the Hydrate $\text{Cp}^*_2\text{Zr}(\text{OH})_2 \cdot (\text{H}_2\text{O})$." Howard, William A.; Parkin, Gerard *Polyhedron* **1993**, *12*, 1253-56.
15. "Persistent Triplet Diradicals from the Dimerization of Silacyclobutadienes." Gee, Jason R.; Howard, William A.; McPherson, Gary L.; Fink, Mark J. *J. Am. Chem. Soc.* **1991**, *113*, 5461-62.

PRESENTATIONS

- Howard, William A.; Fites, Raena J.; Yeager, Adam T.; Sarvela, T. L.; Zhu, Guang; Pang, Keliang. **Aqueous Acid-Base Chemistry Involving Oxovanadium(V) Complexes of 2,6-Pyridinedimethanol, and the X-Ray Crystal Structures of $\text{Na}[\text{VO}_2\{2,6\text{-(OCH}_2)_2\text{NC}_5\text{H}_3\}] \cdot 4 \text{H}_2\text{O}$ and $[\text{1-H-2,6-(HOCH}_2)_2\text{NC}_5\text{H}_3]^+\text{Cl}^-$.** Pacificchem 2005 Conference & Exposition, Honolulu, HI, United States, December, 2005.
- Howard, William A. **Aqueous Acid-Base Chemistry Involving Oxovanadium(V) Complexes of 2,6-Pyridinedimethanol.** American Chemical Society's 60th Northwest Regional Meeting, Fairbanks, AK, United States, June, 2005.
- Howard, William A.; Fites, Raena J.; Yeager, Adam T.; Sarvela, T. L.; Zhu, Guang; Pang, Keliang. **Aqueous Acid-Base Chemistry Involving Oxovanadium(V) Complexes of 2,6-Pyridinedimethanol in the pH Range of 0 to 8.** American Chemical Society 229th National Meeting, San Diego, CA, United States, March, 2005.
- Howard, William A.. **Chloro, methoxy, and mercapto derivatives of $[\text{Ru}(2,2'\text{-bipyridine})_3]^{2+}$.** Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), INOR-189.
- Howard, William A.; Parkin, Gerard. **Terminal Chalcogenido Complexes of Zirconium: Syntheses and Reactivity of $\text{Cp}^*_2\text{Zr}(\text{E})(\text{NC}_5\text{H}_5)$ (E = O, S, Se, Te).** 209th ACS National Meeting, Anaheim, CA, United States, April, 1995.
- Howard, William A.; Trnka, Tina M.; Parkin, Gerard. **Syntheses of the Phenylchalcogenolate Complexes $(\eta^5\text{-C}_5\text{Me}_5)_2\text{Zr}(\text{EPh})_2$ (E = O, S, Se, Te) and $(\eta^5\text{-C}_5\text{H}_5)_2\text{Zr}(\text{OPh})_2$: Structural Comparisons within a Series of Complexes Containing Zirconium - Chalcogen Single Bonds.** 209th ACS National Meeting, Anaheim, CA, United States, April, 1995.

William A

- Invited Lecture: California State University, Chico Feb., 2000
- Invited Lecture: Illinois State University Jan., 2001
- Invited Lecture: University of North Dakota, Grand Forks Jan., 2001
- Invited Lecture: Worcester Polytechnic Institute Feb., 2001
- Invited Lecture: University of Alaska, Fairbanks Mar., 2001

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