

William Douglas Wheeler

Department of Chemistry
1000 East University Avenue
University of Wyoming
Laramie, WY 82071-3838

307-766-2093

dwheeler@uwyo.edu

<http://www.uwyo.edu/wheelernmr>

EDUCATION

1984 Ph.D., Washington State University, Pullman, WA.

1978 B.S., Northern Arizona University, Flagstaff, AZ.

1987-1987 Postdoctoral Research Associate, Department of Chemistry, Oregon Graduate Center (now Oregon Graduate Institute of Research and Technology). Beaverton, OR. Research Advisor: James K. Hurst.

1984-1987 Postdoctoral Research Associate, Department of Chemistry, Oregon Graduate Center. Beaverton, OR. Research Advisor: Thomas M. Loehr.

ACADEMIC POSITIONS

2004-present Master Technician, Department of Chemistry, University of Wyoming.

1994-2004 Research Scientist, Department of Chemistry, University of Wyoming.

1988-1994 Scientific Instrumentation Specialist, Department of Chemistry, University of Wyoming.

PUBLICATIONS

William D. Wheeler and Yuri Dahnovsky, "Electron propagator calculations in molecular tunneling junctions: The quantum mechanism of conductivity", *J. Am. Chem. Soc.*, (Submitted 2008).

Yu. Dahnovsky, W. D. Wheeler, and J. V. Ortiz, "Electron-electron correlations in molecular tunnel junctions: The noncrossing cluster approximation", *J. Chem. Phys.*, (Submitted 2008).

Joann Sanders-Loehr, William D. Wheeler, Andrew K. Shiemke, Bruce A. Averill and Thomas M. Loehr, "Electronic and Raman Spectroscopic Properties of Oxo-Bridged Dinuclear Iron Centers in Proteins and Model Compounds", *J. Am. Chem. Soc.*, **1989**, *111*, 8084-8093.

William C. Barrette, Jr., Diane M. Hannum, William D. Wheeler and James K. Hurst, "General Mechanism for the Bacterial Toxicity of Hypochlorous acid: Abolition of ATP Production", *Biochemistry*, **1989**, *28*, 9172-9178.

William C. Barrette, Jr., Diane M. Hannum, William D. Wheeler and James K. Hurst, "Viability and Metabolic Capability are Maintained by *Escherichia coli*, *Pseudomonas aeruginosa* and; *Streptococcus lactis* at Very Low Adenylate Energy Charge", *J. Bacteriol.*, **1988**, *170*, 3655-3659.

Wolfgang Maret, Andrew K. Shiemke, William D. Wheeler, Thomas M. Loehr and Joann Sanders-Loehr, "Resonance Raman Spectroscopy of Blue Copper Proteins: Ligand and Coenzyme Effects in Cu(II)-Substituted Liver Alcohol Dehydrogenase", *J. Am. Chem. Soc.*, **1986**, *108*, 6351-6359.

William D. Wheeler and Ronald D. Poshusta, "The Electronic Structure of trans-[Cr(ox)₂(py)₂]- by the X-alpha Scattered Wave Method", *Inorg. Chem.*, **1985**, *24*, 3100-3106.

William D. Wheeler and J. Ivan Legg, "Assignment of the Deuteron NMR Spectra of Chromium(III) Complexes with edta and Related Ligands", *Inorg. Chem.*, **1985**, *24*, 1292-1297.

William D. Wheeler and J. Ivan Legg, "Solution Structure of the Chromium(III) Complex with edta by Deuteron NMR Spectroscopy", *Inorg. Chem.*, **1984**, *23*, 3798-3802.

William D. Wheeler, Sumio Kaizaki and J. Ivan Legg, "A Direct Method for Determining the Structure of Chromium(III) Complexes in Solution by Deuteron Nuclear Magnetic Resonance", *Inorg. Chem.*, **1982**, *21*, 3248-3250.

NMR Instrumentation Training Documents:

Operating the Bruker Avance DRX-400 NMR
Two Dimensional Homonuclear Correlation Spectroscopy, COSY.
Two Dimensional Homonuclear Correlation Spectroscopy, Gradient COSY.
Two Dimensional Homonuclear Correlation Spectroscopy, DQF-COSY.
Two Dimensional Heteronuclear Correlation Spectroscopy, HETCOR.
Two Dimensional Heteronuclear Correlation Spectroscopy, Gradient HMQC.
Waltz - NMR for Windows.
Routine ¹H Measurement.
Common ¹³C NMR Experiments.

Phase Sensitive 2-D NMR.
NMR User Notes (short articles on selected topics).

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Association of Managers of Magnetic Resonance Laboratories (AMMRL)

HONORS AND AWARDS

1978, McAllister Award for outstanding senior chemistry major, Department of Chemistry, Northern Arizona University, Flagstaff, AZ.

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS

1986, "Resonance Raman Spectra of oxo bridged binuclear Iron(III) complexes", American Chemical Society Regional Meeting, William D. Wheeler, Thomas M. Loehr and Joann Sanders-Loehr. Presented a talk.

1984, "Determination of the Solution Structure of Cr(III) and Mo(III) Complexes by Deuteron NMR Spectroscopy". The XXIII International Conference on Coordination Chemistry, J. I. Legg, R. J. Bianchini C. A. Green, S. Kaizaki, N. Koine and W. D. Wheeler. Poster presentation.

1983, "A Structural Study of the Cr(III)-Edta Complex in Solution by Deuteron NMR Spectroscopy", American Chemical Society National Meeting, William D. Wheeler and J. Ivan Legg. Presented a talk.

1983, "X-Alpha Multiple Scattering Calculations on $[\text{CrF}_5\text{py}]^{2-}$ ", International Symposium on Atomic, Molecular and Solid-State Theory, Collision Phenomena and Computational Quantum Chemistry. Quantum Chemistry Symposium No. 17, William D. Wheeler, J. Ivan Legg, and Ronald D. Poshusta. Poster presentation.

OTHER ACTIVITIES/ACCOMPLISHMENTS

Continuing Education

Electrical Engineering, EE-4230, Digital Filter Design, Fall 1996, University of Wyoming, Laramie, WY.

Workshop on NMR and the Structure of Biomolecules, March 4-9, 1990. Interdisciplinary Center for Biotechnology Research, University of Florida, Gainesville, FL.

Instrumentation development:

MatlabNMR: I developed a Matlab program to process one and two-dimensional NMR data. This program is both user friendly and flexible enough to allow for expanded capabilities.

Waltz: An instrument-computer interface and software to replace the data system on the department JEOL GSX-270 NMR Spectrometer. An IBM compatible computer and a suitable data acquisition board were purchased. Supplementary electronics were designed to complete the interface and make the data acquisition board work properly. This project was undertaken in house rather than seeking funding for the \$70,000 JEOL upgrade. The software is freely available to students and faculty for use in remote data processing.

Lifetime: An instrument-computer interface and software to replace an aging data acquisition system used to determine the kinetic lifetime of singlet Oxygen in solution. This project was done at the request of Dr. Clennan.

NMR Instrumentation Training:

Avance Spectrometer Maintenance and Service Course, September 23-26, 1997. Bruker Instruments, Billerica, MA.

Avance I Course, August 18-21, 1997. Bruker Instruments, Billerica, MA.

GX System Management Course, March 25-29, JEOL Instruments, Peabody, MA.