

**Lei Yang, Ph.D.**  
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University of Central Arkansas  
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**EDUCATION:**

- Ph.D. Department of Chemistry and Biochemistry  
University of Oklahoma–Norman, 06/2008  
Thesis Title: *Synthesis and Characterization of Model Complexes of the Cu<sub>z</sub> Center from Nitrous Oxide Reductase*  
Advisor: Dr. Robert P. Houser  
Committee Members: Dr. George Richter-Addo, Dr. Kenneth M. Nicholas,  
Dr. Ronald L. Halterman, Dr. Lee R. Krumholz
- M.S. Department of Chemistry  
Nankai University, Tianjin, P. R. China, 06/2003
- B.E. Department of Material and Chemical Engineering  
Guilin University of Technology, Guilin, P. R. China, 06/1998

**PROFESSIONAL EXPERIENCE:**

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|------------------------|--|-----------------|
| Assistant Professor    | Department of Chemistry<br>University of Central Arkansas  | 08/2011–present |
| Postdoctoral Associate | Department of Chemistry<br>University of Minnesota–Twin Cities<br>Advisor: Dr. William B. Tolman           | 07/2008–08/2011 |
| Graduate Assistant     | Department of Chemistry and Biochemistry<br>University of Oklahoma–Norman<br>Advisor: Dr. Robert P. Houser | 08/2003–06/2008 |
| Graduate Assistant     | College of Chemistry<br>Nankai University<br>Advisor: Dr. Shiping Yan                                      | 09/2000–07/2003 |

**RESEARCH EXPERIENCE:**

- Assistant Professor, University of Central Arkansas, 08/2011–present
- Initiated a research project about cooperative CO<sub>2</sub> and N<sub>2</sub>O activation by binucleating organic ligand.
  - Initiated a research project about dynamic metal-organic frameworks for adsorption and storage of small gas molecules.

Postdoctoral Associate, University of Minnesota–Twin Cities, 07/2008–08/2011

- Synthesized multinuclear copper/disulfide complexes and characterized their structural and spectroscopic properties by X-ray crystallography, NMR, UV-vis and IR; Conducted electrochemical and kinetic studies of copper-sulfide complexes; Investigated the bond and valence properties of copper-sulfide clusters by using EXAFS and X-ray absorption spectroscopy in collaboration with Dr. Edward I. Solomon's research group at Stanford University.
- Was responsible for EPR studies on copper-sulfide and copper-oxygen complexes for group members.
- Performed operational responsibility for the Agilent GC-MS instrument in instrument lab.

Graduate Assistant, University of Oklahoma–Norman, 08/2003–05/2008

- Initiated a project to synthesize copper-sulfido models of Cu<sub>2</sub> center from nitrous oxide reductase.
- Designed and synthesized a family of Cu(I) and mixed-valence copper clusters with pyridylamide ligand system; Studied the spectroscopic and electrochemical properties of these copper complexes by X-ray crystallography, NMR, EPR, UV-vis, IR and CV; Explored reactivity of these copper complexes towards sulfur-containing reagents; Work resulted in publications (see publication list).
- Maintained operational responsibility for a Bruker-AXS APEX CCD area detector on a D8 platform goniometer in X-ray crystallography lab and Independently solved over ten single crystal structures.
- Participated in team to maintain operational responsibility for Bruker EPR spectrometer.

Graduate Assistant, Nankai University, 09/2000–06/2003

- Initiated a project to synthesize transition metal complexes with polypyridyl ligand systems.
- Characterized a family of transition metal complexes by X-ray crystallography, EPR and UV-vis.
- Investigated the magnetic properties and DNA cleavage behaviors of these complexes; Work resulted in publications (see publication list).

## **PUBLICATIONS:**

*Work at UCA (underlined names denote undergraduate co-authors)*

17. Joshua A. Goodner, Brandon J. Powers, Douglas R. Powell and Lei Yang\*, "Di- $\mu$ -hydroxy-[N,N'-bis(2,6-dimethylphenyl)pentane-2,4-diiminato]-zinc(II)" *Acta Cryst. E*, **2014**, E70, m318-319
16. Ethan P. McMoran, Joshua A. Goodner, Douglas R. Powell and Lei Yang\*, "Synthesis and Characterization of Cu(II), Zn(II) and Fe(II) Complexes Supported by Pyridylamide Ligands" *Inorg. Chim. Acta*, **2014**, 421, 465-472

*Work before UCA*

15. Lei Yang, William B. Tolman\*, "Type 1 Copper Site Synthetic Model Complexes with Increased Redox Potentials" *J. Biol. Inorg. Chem.*, **2012**, 11, 285-291
14. Ritimukta Sarangi, Lei Yang, William B. Tolman\*, Edward I. Solomon\*, "X-Ray Absorption Spectroscopic and Computational Investigation of a Possible S...S Interaction in the [Cu<sub>3</sub>L<sub>3</sub>( $\mu_3$ -S)<sub>2</sub>]<sup>3+</sup> Core" *J. Am. Chem. Soc.*, **2011**, 133, 17180-17191
13. Lei Yang, Jacqui Tehranchi, William B. Tolman\*, "Reaction of Ph<sub>3</sub>Sb=S with Copper(I)

- Complexes Supported by N-Donor Ligand: Formation of Stable Adducts and S-Transfer Reactivity" *Inorg. Chem.*, **2011**, *50*, 2606-2612.
12. Lei Yang, Douglas R. Powell, Robert P. Houser, "Copper(II) Coordination Chemistry of 2-methyl-2-(2-pyridyl)-1,3-propan-diol: Syntheses and Structures of mono-, di-, and tricopper complexes" *Polyhedron*, **2010**, *29*, 1946-1955.
  11. Lei Yang, Zhaodong Wang, Douglas R. Powell, Robert P. Houser\*, "A [Cu<sub>16</sub>S<sub>10</sub>]<sup>4-</sup> Cluster Containing  $\mu_3$ - and  $\mu_4$ -sulfido Ligands" *Dalton Trans.*, **2009**, 4439-4441.
  10. Urmila Pal Chaudhuri, Lei Yang, Laura R. Whiteaker, Arunendu Mondal, Matthew R. Fultz, Douglas R. Powell, Robert P. Houser\*, "Neutral Pyridylmethylamide Ligand and Their Mononuclear Copper(II) Complexes" *Polyhedron*, **2007**, *26*, 5420-5431.
  9. Lei Yang, Douglas R. Powell, Eric L. Klein, Andreas Grohmann\*, Robert P. Houser\*, "Delocalized Mixed-Valence Bi- and Trinuclear Complexes with Short Cu-Cu Bonds" *Inorg. Chem.*, **2007**, *46*, 6831-6833.
  8. Lei Yang, Douglas R. Powell, Robert P. Houser\*, "Structural Variation in Copper(I) Complexes with Pyridylmethylamide Ligands: Structural Analysis with A New Four-coordinate Geometry Index,  $\tau_4$ " *Dalton Trans.*, **2007**, 955-964. **(Listed as one of the top ten most highly cited articles published in Dalton Trans. in 2009)**
  7. Lei Yang, Robert P. Houser\*, "Copper(I) Coordination Chemistry of (Pyridylmethyl)amide Ligands" *Inorg. Chem.*, **2006**, *45*, 9416-9422.
  6. Urmila Pal Chaudhuri, Laura R. Whiteaker, Lei Yang, Robert P. Houser\*, "Multinuclear Copper Complexes of Pyridylmethylamide Ligands" *Dalton Trans.*, **2006**, 1902-1908.
  5. J. T. Michels, B. G. O'Malley, E. L. Klein, L. Yang, A. Grohmann, R. P. Houser\*, "2-Methyl-N,N'-bis[2-(methylsulfonyl)ethyl]-2-(2-pyridyl)-N, N'-ditosylpropane-1,3-diamine" *Acta Cryst.*, **2005**, *E61*, o3834-o3836.
  4. Lei Yang, Yi Peng, Fang Bian, Shi-ping Yan\*, Dai-zheng Liao, Peng Cheng, Zong-hui Jiang, "Structure and Magnetic Properties of A Dinuclear Complex [Cu<sub>2</sub>(TPA)<sub>2</sub>(o-phth)](ClO<sub>4</sub>)<sub>2</sub>" *J. Chem. Cryst.*, **2005**, *35*, 555-559.
  3. Lei Yang, Jin-lei Tian, Zhan-quan Liu, Shi-ping Yan\*, Dai-zheng Liao, Zong-hui Jiang, Peng Cheng, "Syntheses and Structural Characterizations of [Co<sup>III</sup>(TPA)(N<sub>3</sub>)<sub>2</sub>](ClO<sub>4</sub>) and [Cu<sup>II</sup>(TPA)(N<sub>3</sub>)](ClO<sub>4</sub>) (TPA = Tris(2-pyridylmethyl)amine)" *Chinese J. Struct. Chem.*, **2004**, *23*, 510-515.
  2. Lei Yang, Fang Bian, Shi-ping Yan\*, Dai-zheng Liao, Peng Cheng, Zong-hui Jiang, "Structure and Magnetic Properties of A One-Dimensional Chain Complex {[Mn<sub>2</sub>(TPA)<sub>2</sub>(o-phth)](ClO<sub>4</sub>)<sub>2</sub>]<sub>n</sub>" *Inorg. Chem. Comm.*, **2003**, *6*, 1188-1191.
  1. Lei Yang, Yi Peng, Fang Bian, Shi-ping Yan\*, Dai-zheng Liao, Peng Cheng, Zong-hui Jiang, "Synthesis, Structure and Properties of An Oxalato-Bridged Dinuclear Nickel(II) Complex" *J. Coord. Chem.*, **2003**, *56*, 961-966.

#### INVITED LECTURES AND CONFERENCE PRESENTATIONS:

*Work at UCA (underlined names denote undergraduate co-authors)*

20. Ethan, McMoran, Lei Yang\* "Synthesis and Characterization of Dynamic Porous Coordination Polymers (DPCPs) Supported by Amide Ligands", 247<sup>th</sup> ACS National Meeting, Dallas, March **2014**
19. Brandon Powers, Joshua Goodner, Lei Yang\*, "Synthesis and Characterization of Zinc Complexes Supported by Bidentate Ligands", MWRM ACS Regional Meeting, Springfield, October **2013**

18. Ethan, McMoran, Lei Yang\* "Synthesis and characterization of Dynamic Porous Coordination Polymers (DPCPs) supported by amide ligands", 245<sup>th</sup> ACS National Meeting, New Orleans, April **2013**
17. Jamie Beck, Lei Yang\*, "Construction of low-coordinate iron sulfur clusters supported by bidentate guanidine ligands", 245<sup>th</sup> ACS National Meeting, New Orleans, April **2013**
16. Joshua Goodner, Brandon Powers, Lei Yang\*, "Activation of CO<sub>2</sub> by Zinc- $\beta$ -diketimate Complexes", 245<sup>th</sup> ACS National Meeting, New Orleans, April **2013**
15. Ethan McMoran, Pyi Thein Kyaw, Lei Yang\*, "Synthesis and Characterization of Transition Metal Complexes Supported by Pyridylamide Ligands", 21<sup>th</sup> *Midsouth Inorganic Chemists Association Meeting*, University of Central Arkansas, Conway, AR, March **2013**
14. Ethan McMoran, Pyi Thein Kyaw, Lei Yang\*, "Synthesis and Characterization of Transition Metal Complexes Supported by Pyridylamide Ligands", 33<sup>rd</sup> Annual Undergraduate Research Conference, University of Memphis, Memphis, TN, February **2013**
13. Ethan McMoran, Pyi Thein Kyaw, Lei Yang\*, "Synthesis and Characterization of Transition Metal Complexes Supported by Pyridylamide Ligands", College of Natural Sciences and Mathematics, University of Central Arkansas, Conway, AR, November **2012**

#### Work before UCA

12. Lei Yang, "Reactions of Ph<sub>3</sub>Sb=S with Copper(I) Complexes Supported by N-Donor Ligands: Formation of Stable Adducts and S-transfer Reactivity", University of Memphis, Memphis, TN, August **2013**
11. Lei Yang, "Type1 Copper Site Synthetic Model Complexes with Increased Redox Potentials", 2012 Missouri Inorganic Day, St Louis, MO, May **2012**
10. Lei Yang, "Modeling Active Sites in Copper Enzymes", *Hendrix College*, Conway, AR, March **2012**
9. Lei Yang, William B. Tolman, "Type1 Copper Site Synthetic Model Complexes with Increased Redox Potentials", 18<sup>th</sup> *Midsouth Inorganic Chemists Association Meeting*, October **2011**
8. Lei Yang, "Green Houses Gases and Future Energy Use", *University of Minnesota*, Minneapolis, MN, March **2010**
7. Lei Yang, Robert P. Houser\*, "Model Complexes of the Cu<sub>Z</sub> Center from Nitrous Oxide Reductase" 235<sup>th</sup> *American Chemical Society National Meeting*, New Orleans, LA, April **2008**
6. Lei Yang, Robert P. Houser\*, "Copper Sulfide Cluster: Model Complexes of the Cu<sub>Z</sub> Center from Nitrous Oxide Reductase" 53<sup>rd</sup> *Annual Oklahoma ACS Pentasectional Meeting*, Duncan, OK, March **2008**
5. Lei Yang, Robert P. Houser\*, "Model Complexes of the Cu<sub>Z</sub> Center from Nitrous Oxide Reductase" 234<sup>th</sup> *American Chemical Society National Meeting*, Boston, MA, August **2007**
4. Lei Yang, Zhaodong Wang, Robert P. Houser\*, "Mixed-Valence Copper Trimers and Copper Sulfide Clusters: Model of the Cu<sub>Z</sub> Center in Nitrous Oxide Reductase" *Gordon Research Conference: Inorganic Chemistry*, Newport, RI, July **2007**
3. Lei Yang, Urmila Pal Chaudhuri, Laura R. Whiteaker, Robert P. Houser\*, "Progress Towards Model Complexes of the Cu<sub>Z</sub> Center from Nitrous Oxide Reductase" 231<sup>st</sup> *American Chemical Society National Meeting*, Atlanta, GA, March **2006**
2. Lei Yang, Urmila Pal Chaudhuri, Laura R. Whiteaker, Robert P. Houser\*, "Progress Towards Model Complexes of the Cu<sub>Z</sub> Center from Nitrous Oxide Reductase" 12<sup>th</sup> *International Conference on Biological Inorganic Chemistry*, Ann Arbor, MI, August **2005**

1. Lei Yang, Urmila Pal Chaudhuri, Laura R. Whiteaker, Robert P. Houser\*, "Progress Towards Model Complexes of the Cu<sub>z</sub> Center from Nitrous Oxide Reductase" *11<sup>th</sup> Chemistry and Biochemistry Day Research Conference*, Norman, OK, November **2004**

### **TEACHING EXPERIENCE:**

University of Central Arkansas, 08/2011–present

- Taught College Chemistry II (CHEM 1451) and two lab sections.
- Taught Organic Spectroscopy (CHEM 3211) to junior and senior students.
- Taught Intermediate Inorganic Chemistry (CHEM 3360) to junior students.
- Supervised four undergraduate students for their research projects.

University of Minnesota–Twin Cities, 07/2008–08/2011

- Mentorship Program for Aspiring Chemistry Teachers (MPACT) provided by Department of Chemistry in spring semester of 2010.
  - Prepared and gave course lectures and special topic talks (Chem1021) to general chemistry undergraduates with science and non-science majors.
  - Conducted in-detail learning and discussion about Chem1021 course content as the leader of a ChemFoundations session.
  - Guided course review discussions and problem solving activities.
  - Provided help and advice for students on questions and problems in office hours.
- Supervised undergraduate and graduate students for their research projects.

University of Oklahoma–Norman, 08/2004–05/2008

- Taught general and organic laboratory classes; Directed lecture review and group works in general chemistry recitation.
- Supervised undergraduate students for their research projects.

### **AWARDS:**

8. January 2011, "Green Chemistry Conference Scholarship" by Department of Chemistry, University of Minnesota–Twin Cities
7. May 2008, "Outstanding Research Assistant" by University of Oklahoma–Norman
6. March 2008, "Best Research Poster Award" at the Pentasectional ACS meeting, Lawton, Oklahoma
5. August 2007, "Student Conference Funding" by College of Arts and Sciences, University of Oklahoma–Norman
4. July 2007, "Student Travel Award" by the ACS Division of Inorganic Chemistry, American Chemical Society
3. April 2007, "Sherril D. Christian Award" by Department of Chemistry and Biochemistry, University of Oklahoma–Norman
2. April 2007, "Robberson Conference Presentation Travel Grants" by Graduate College, University of Oklahoma–Norman
1. March 2007, "Robert E. and Mary B. Sturgis Scholarship" by College of Arts and Sciences, University of Oklahoma–Norman

**COLLEGE AND DEPARTMENT SERVICE:**

Curriculum Committee (Department of Chemistry)	2014–present
Chemical Literature Subcommittee (Department of Chemistry)	2013–present
Program Assessment Subcommittee (Department of Chemistry)	2013–present
Search Committee for Biochemistry Position (Department of Chemistry)	2012
Honors Committee (Department of Chemistry)	2012–present
Research Committee (College of Natural Sciences and Mathematics)	2011

**JOURNALS FOR WHICH I HAVE REFEREED:**

Chemical Communication	Dalton Transactions
European Journal of Inorganic Chemistry	CrystEngComm
Journal of Coordination Chemistry	Journal of Molecular Structure
Inorganica Chimica Acta	PCCP