RUI ZHANG, Ph.D. 05/2017

Professor of Chemistry
Western Kentucky University
1906 College Height Blvd,
Bowling Green, KY 42101

Office: TCCW 443
Tel: 1-270-745-3803
Fax: 1-270-745-5361
Email: rui.zhang@wku.edu

EDUCATION

- Ph.D. in Chemistry: The University of Hong Kong, Hong Kong. 1997—2001
  - Dissertation title: *Asymmetric Organic Oxidation by Chiral Ruthenium Complexes Containing D_2 and D_4 Symmetric Porphyrinato Ligands*; Advisor: Prof. Chi-Ming Che
- M. Sc. in Organic Chemistry: Sichuan University, China. 1993—1996
  - Thesis title: *Aerobic Catalytic Oxidation of Unsaturated Hydrocarbons by Cobalt Hydroxamic Acid Complexes;* Advisor: Prof. X-J. Li
- B.Sc. in Organic Chemistry: Sichuan University, China, First class (10%) 1989—1993

PROFESSIONAL POSITIONS

- Full Porfessor, Western Kentucky University, 2017—present
- Associate Professor (tenured), Western Kentucky University, 2012—2017
- Assistant Professor, Western Kentucky University, USA. 2006—2012
- Research Assistant Professor & Visiting Lecturer, University of Illinois at Chicago, 2003—2006.
- Alexander-von-Humboldt Postdoctoral Fellow, Univerisyt of Würzburg, Germany, 2001—2002.
- Research Assistant, The University of Hong Kong, Hong Kong, 1997—2001.

HONORS AND AWARDS

- Nominee for Ogden Collge Rearch/Creative Award, 2014 and 2015
- Young Investigator Award, WKU 2013
- Provost's Recognition Award (First-time PI Award), 2008
- Provost's Recognition Award (Most Prolific Junior Grant Proposer), 2007
- Alexander-von-Humboldt Postdoctorate Fellowship (Germany), 2001—2002
- Outstanding Graduate Award (Sichuan University, China), 1996
- Guang-Hua Undergraduate Award (Sichuan University, China), 1989—1993

TEACHING EXPERIENCES

- **Western Kentucky University**
  - Introduction to College Chemistry (Chem 116)
  - Organic Chemistry I (Chem 340)
  - Organic Chemistry Lab I (Chem 341)
  - Organic Chemistry II (Chem 342)
  - Organic Chemistry Lab II (Chem 343)
  - An Introduction to Organic Synthesis (Chem 440)
  - Advanced Organic Chemistry (Chem 541)
  - Lab Chemicals (Chem 580)

- **University of Illinois at Chicago**
  - Organic Chemistry (Chem 222), 2004 — 2006

SERVICE ACTIVITIES

- Assistant to Department Head, 2012 — 2015
- Department Committees and Services
  - Chemistry Club (ACS Student Affiliate Chapter) Advisor, 2006—2008
    - Chapter won Outstanding Award (highest) from ACS, 2006—2007
    - Chapter won Commendable Award from ACS, 2007—2008
    - Chapter won a ACS grant award of $2800 to host the undergraduate program at SERMACS meeting in Nashville, 2008
  - Physic Chemistry Search Committee, 2008-09
  - Organic Chemistry Search Committee, 2008-09
  - Senior Research Associate Search Committee, 2009—2010
  - Chemistry Advisor, 2011—
  - Departmental Office Associate Search Committee, Chair, 2013
  - Graduate Office Associate of the Search Committee, Chair, 2013
  - Organic Chemistry Search Committee Chair, 2015

- College Committees and Services
  - Ogden College Student Awards Committee, Spring 2007, 2008, 2009
  - Ogden College Faculty Awards Committee, Spring 2008, 2012, 2013
  - Ogden College Faculty Sabbatical Committee, 2012
  - Ogden College Space Committee, 2012—2015

- University Committees and Services
  - Ogden Dean Search Committee, April —October, 2011
  - Member, Professional Education Council, 2009—2013, 2015
  - FUSE grant reviewer, 2014, 2015 and 2016
  - Olympic Science Coordinator (Cannot judge a powder), 2015
  - Olympic Science Coordinator (Wright Stuff), 2016

- Public and Professional Services
  - NSF Proposal reviewer for Chemical Catalysis program
  - NSF Panelist (11 proposals reviewed) for the TUES program
  - Panelist (21 proposals reviewed) for the SMART program of Department of Defense
  - Invited Journal Reviewer for *Journal of Organic Chemistry* 2003—present (>30 manuscripts reviewed)
    - Journal Referee for *Chemical Communications*, *Inorganic Chemistry, Journal of Catalysis, Coordination Chemistry Review, Applied Catalysis A; Industrial & Engineering Chemistry Research*
  - Proposal Reviewer for the ACS Petroleum Research Fund
  - Chair of Chemistry Division, Kentucky Academy of Science, 2010
  - Committee member of the 96th Kentucky Academy of Science Annual Meeting
  - Secretary of Chemistry Division, Kentucky Academy of Science, 2009
  - Judge for 95th Kentucky Academy of Science Annual Meeting
  - Committee chairs for final defense of Master degree, 2009—
  - Committee member of 60th SERMACS, 2007—2008

- Judge for 94th Kentucky Academy of Science Annual Meeting, Lexington, KY
- Judge for 60th SERMACS Meeting (Undergraduate program), Nashville, TN
- Committee member (external) for the final defense of Philosophy degree (Dr. Libin, Xu), University of Illinois at Chicago, 2007
- Faculty advisor for WKU Chinese Students & Scholars Association (CSSA), 2012—

RESEARCH FUNDING

External (a total of $930K)

- Zhang, R. (PI) "Mechanistic and Synthetic Investigations on the Biomimetic Metal-Catalyzed Sulfoxidations" Kentucky EPSCoR Research Enhancement Grant, **$35,500**, 2015.
- Zhang, R. (PI) "RUI: Production of Highly Reactive Metal-Oxo Species with Molecular Oxygen and Visible Light for the Selective Oxidative Catalysis" National Science Foundation, **$300,468**, 2015**.**
- Zhang, R. (PI) "RUI: Production of Highly Reactive Metal-Oxo Species with Molecular Oxygen and Visible Light for the Selective Oxidative Catalysis" National Science Foundation, **$267,000**, 2012**.**
- Zhang, R. (PI); Dahl, D.; Pesterfield, L.; Webb, C. "CCLI: Integration of NMR into the Chemistry Curriculum at WKU and ECTC and Assessment of Factors Leading to a Successful Collaboration Between 2- and 4-Year Colleges" National Science Foundation, **$250,000**, 2010**.**
- Zhang, R. (PI)"Generation and Kinetic Studies of High-Valent Metal-Oxo Intermediates", Petroleum Research Fund (ACS), **$50,000**, 2008.
- Zhang, R. (PI) "Photochemical Generation of Highly Reactive Ruthenium(V)-Oxo Intermediates for Oxidation Catalysis with Molecular Oxygen and Visible Light" Kentucky EPSCoR Research Enhancement Grant, **$25,000**, 2008.

Internal (a total of $ 101K)

- Biechele-Speziale, D. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2017.
- Kash, B. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2017.
- Ranburger, D. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2016.
- Malone, J. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2016.
- Jeddi, H. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2015.
- Kwong, K.-W. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2014.
- Luo, W. L. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2013.
- Altman N. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2013.
- Yuan Z. and Zhang, R. Faculty-Undergraduate Student Engagement, $4,000, 2012.
- Zhang, R. "Investigation on the Metal-Catalyzed Selective Sulfide Oxidations", RCAP Fund, $16,113, 2012.
- Zhang, R. "A Photochemical Approach to Highly Reactive Metal-Oxo Species for the "Green" Oxidation Catalysis", RCAP Fund, $16,000, 2011.
- Zhang, R. "Generation of Highly Reactive Porphyrin Ruthenium-Oxo Intermediates and Photocatalysis for Organic Oxidation of Hydrocarbons by O_2", Proposal Incentive Fund, $12,076, 2007.
- Zhang, R. "Generation of High-Valent Ruthenium-Oxo Intermediates and Kinetic Studies of Their Oxidation Reactions", Material Characterization Center, $8,000, 2006.
- Zhang, R. "Photochemical Generation and Kinetic Studies of Highly Reactive Ruthenium(V)-Oxo Intermediates", Junior Faculty Scholarship, $4,000, 2006.

PUBLICATIONS

1. Peer-Reviewed Journal Publications (* for the correspondence author)

WKU (WKU student co-authors underlined)

1. Lee, N.-F.; Malone, J.; Jeddi, H.; Kwong, K.-W.; Zhang, R.* "Visible-light photolysis of corrole-managnese(IV) nitrites to generate corrole-manganese(V)-oxo complexes" *Inorg. Chem. Commun.* **2017**, 82, 27-30.
2. Kwong, K.-W.; Lee, N.-F.; Ranburger, D.; Malone, J.; Zhang, R.* "Visible light formation of corrole-managnese(V)-oxo complexes: Observation of multiple oxidation pathways" *J. Inorg. Biochem.* **2016**, 163, 39-44.
3. Kwong, K.-W.; Winchester, M.; Zhang, R.* Photochemical generation of manganese(IV)-oxo porphyrins by visible light photolysis of dimanganese(III) μ-oxo bis-porphyrins, *Inorg. Chim. Acta* **2016**, 451, 202-206.
4. Chen, T.-H.; Kwong, K.-W.; Lee, N.-F.; Ranburger, D.; Zhang, R.* Highly efficient and chemoselective oxidation of sulfides catalyzed by iron(III) corroles with iodobenzene diacetate. *Inorg. Chim. Acta* **2016**, 451, 65-72.
5. Chen, T.-H.; Asiri, N; Kwong, K.-W.; Malone, J.; Zhang, R. Ligand control in photochemical generation of high-valent porphyrin-iron-oxo derivatives, *Chem. Commun*. **2015**, 51, 9949-9952.
6. Kwong, K.-W.; Chen, T.-H.; Luo, W.- L.; Jeddi, H.; Zhang, R., A biomimetic oxidation catalyzed by manganese(III) porphyrins and iodobenzene diacetate: Synthetic and mechanistic investigations. *Inorg. Chim. Acta* **2015**, 430, 176-183.
7. Chen, T.-H.; Kwong, K.-W.; Carver, A.; Luo, W. L.; Zhang, R., Enhanced iron(III) corrole-catalyzed oxidations with iodobenzene diacetate: Synthetic and mechanistic investigations. *Appl. Catal. A* **2015,** 497, 121-126.
8. Zhang, R.;* Vanover, E.; Luo, W.-L; Newcomb, M. Photochemical generation and kinetic studies of a putative porphyrin-ruthenium(V)-oxo species *Dalton Trans.* **2014,** 43, 8749-8756**.**
9. Chen, T.-H.; Yuan, Z.; Carver, A.; Zhang, R.* "Visible light-promoted selective oxidation of sulfides to sulfoxides catalyzed by ruthenium porphyrins with iodobenzene diacetate" *Appl. Catal. A* **2014,** 478, 275-282**.**
10. Zhang, R.;* Vanover, E.; Chen, T.-H.; Thompson, H. "Visible light-driven aerobic oxidation catalyzed by a diiron(IV) μ-oxo biscorrole complex**"** *Appl. Catal. A* **2013,** 465, 95-100**.**
11. Webb, C; Dahl, D.; Pesterfield, L.; Lovell, D.; Zhang, R.;* Ballard, S; Kellie, S. "Modeling Collaboration and Partnership in a Program Integrating NMR across the Chemistry Curriculum at a University and a Community and Technical College" *J. Chem. Educ.* **2013**, 90, 873-876.
12. Abebrese, C.; Huang, Y.; Pan, A.; Yuan, Z.; Zhang, R.* "Kinetic studies of oxygen atom transfer reactions from trans-dioxoruthenium(VI) porphyrins to sulfides" *J. Inorg. Biochem.* **2011**, 105, 1555-1561.
13. Zhang, R.*; Huang, Y.; Abebrese, C.; Thompson, H.; Vanover, E.; Webb, C.* "Generation of *trans*-dioxoruthenium(VI) porphyrins: A photochemical approach" *Inorg. Chim. Acta*, **2011**, 372, 152-157.
14. Huang, Y.; Vanover, E.; and Zhang, R.* "A facile photosynthesis of *trans*-dioxoruthenium (VI) porphyrins", *Chem. Commun.*, **2010**, *46*, 3776-3778.
15. Vanover, E.; Huang, Y.; Xu, L.; Newcomb, M.; Zhang, R.* "Photocatalytic aerobic oxidation by a bis-porphyrin-ruthenium(VI) μ-oxo dimer: observation of a putative porphyrin-ruthenium(V)-oxo intermediate", *Org. Lett.*, **2010**, *12,* 2246-2249.

16. Harischandra, D.; Lowery, G.; Zhang, R.*, Newcomb, M. "Production of a Putative Iron(V)-Oxo-corrole Species by Photo-Disproportionation of a Bis-Corrole-Diiron(IV)-μ-Oxo Dimer: Implication for a Green Oxidation Catalyst", *Org. Lett.*, **2009**, *11*, 2089-2092.
17. Horner, J. H.; Sheng, X.; Chandrasena, R. E. P.; Zhang, R.; Wang, Q.; Newcomb, M.. Compounds I by photo-oxidation of compounds II. *ECS Transactions* **2009**, *19*, 71-80.
18. Zhang, R.*, Newcomb, M. "Laser Flash Photolysis Generation of High-Valent Transition Metal-Oxo Species: Insights from Kinetic Studies in Real Time", *Acc. Chem. Res.*, **2008**, *41*, 468-477.
19. Pan, Z.; Zhang, R.*, L. W.-M. Fung, Newcomb, M.* "Photochemical Production of a Highly Reactive Porphyrin-Iron-Oxo Species", *Inorg. Chem.* **2007**, *46,* 1517-1519.
20. Vanover, E.; Lowery, G.; and Zhang, R.* "Production of Highly Reactive Metal-Oxo Species with Molecular Oxygen and Visible Light for the Selective Oxidation Catalysis" 2010, *Preprints - American Chemical Society*, *Division of Petroleum Chemistry*, *55* (1).

Prior to WKU

21. Newcomb, M.; Zhang, R.; Chandrasena, R. E. P.; Humgensen, J. A.; Horner, J. H. "Cytochrome P450 Compound I", *J. Am. Chem. Soc.*, **2006**, *128*, 4580-4581.
22. Zhang, R.; Nagraji, N.; Lansakara, D.; Hager, L. P.; Newcomb, M "Kinetics of Two-Electron Oxidations by the Compound I Derivative of Chloroperoxidase, a Model for Cytochrome P450 Oxidants", *Org. Lett.*, **2006**, *8*, 2731-2734.
23. Newcomb, M.; Zhang, R., Pan, Z.; Harischandra, D. N.; Chandrasena, R. E. P.; Horner, J. H.; Martinez, E. "Laser Flash Photolysis Production of Metal-Oxo Derivatives and Direct Kinetic Studies of Their Oxidation Reactions", *Catal. Today*, **2006**, *117*, 98-104.
24. Pan, Z.; Zhang, R.*, Newcomb, M.* "Kinetic Studies of Reactions of Iron(IV)-Oxo Porphyrin Radical Cations with Organic Reductants", *J. Inorg. Biochem.* **2006**, *100*, 524-532.
25. Harischandra, D. N.; Zhang, R.*; Newcomb, M.* "Photochemical Generation of a Highly Reactive Iron-Oxo Intermediate; A True Iron(V)-Oxo Species?", *J. Am. Chem. Soc.*, **2005**, *127*, 13776-13777.
26. Zhang, R.; Harischandra, D. N.; Newcomb, M. "Laser Flash Photolysis Generation and Kinetic Studies of Corrole Manganese(V)-Oxo Complexes", *Chem. Eur. J.* **2005**, *11*, 5713-5720.
27. Zhang, R.; Chandrasena, R. E. P.; Martinez, E.; Horner, J. H.; Newcomb, M. "Formation of Compound I by Photo-Oxidation of Compound II", *Org. Lett.*, **2005**, *7*, 1193-1195.
28. Zhang, R.; Horner, J. H.; Newcomb, M. "Laser Flash Photolysis Generation and Kinetic Studies of Porphyrin Manganese-Oxo Intermediates: Rate Constants for Fast Oxidations Effected by Porphyrin-Manganese^{V}-Oxo Species and Disproportionation Equilibrium Constants for Porphyrin-Manganese^{IV}-Oxo Species " *J. Am. Chem. Soc.,* **2005***, 127,* 6573-6582.
29. Zhang R.; and Newcomb, M. "Laser Flash Photolysis Formation and Direct Kinetic Studies of Manganese(V)-Oxo Porphyrin Intermediates" *J. Am. Chem. Soc.* **2003**, *125*, 12418-12419.
30. Nardello, V.; Aubry, J.-M, De Vos, D. E.; Neumann, R.; Adam, W.; Saha-Möller, C. R.; Zhang, R.; ten Elshof, J. E.; Witte, P. T.; Alsters. P. L. "Inorganic Compounds and Materials as Catalysts for Oxidations with Aqueous Hydrogen Peroxide" *J. Mol. Catal. A. Chem,* **2006**, *251*, 183-191.
31. Adam, W.; Alsters, P. L.; Neumann, R.; Saha-Möller, C. R.; Seebach, D.; Beck, A. K.; Zhang, R* "Chiral Hydroperoxides as Oxygen Source in the Catalytic Stereoselective Epoxidation of Allylic Alcohols by Sandwich-Type Polyoxometalates: Control of Enantioselectivity through a Metal-Coordinated Template" *J. Org. Chem.* **2003**, *68*. 8222-8231.
32. Adam, W.; Beck, A. K.; Pichota, A.; Saha-Möller, C. R.; Seebach, D.; Vogl, N.; Zhang, R. "Control of Enantioselectivity through a Hydrogen-Bonded Template in the Vanadium(V)-Catalyzed Epoxidation of Allylic Alcohols by Optically Active Hydroperoxides" *Tetrahedron: Asymmetry* **2003**, *14*, 1355-1361.

33. Adam, W.; Alsters, P.; Neumann, R.; Saha-Möller, C. R.; Seebach, D.; Zhang, R* "Highly Efficient Catalytic Asymmetric Epoxidation of Allylic Alcohols by an Oxovanadium-Substituted Polyoxometalate with a Regenerative TADDOL-Derived Hydroperoxide" *Org. Lett.* **2003**, *5*, 725-728.
34. Alsters, P. L.; Witte, P. T.; Neumann, R; Rozner, Dorit S.; Adam, W.; Zhang, R.; Reedijk, J.; Gamez, P.; ten Elshof, J. E.; Chowdhury, S. R. "Fine-tuning and recycling of homogeneous tungstate and polytungstate epoxidation catalysts" Mechanisms in Homogeneous and Heterogeneous Epoxidation Catalysis (2008), 415-428.
35. Adam, W.; Alsters, P.; Neumann, R.; Saha-Möller, C. R.; Sloboda-Rozner, D.; Zhang, R* "A Highly Chemoselective, Diastereoselective and Regioselective Epoxidation of Chiral Allylic Alcohols with Hydrogen Peroxide, Catalyzed by Sandwich-Type Polyoxometalates: Enhancement of Reactivity and Control of Selectivity by the Hydroxy Group through Metal-Alcoholate Bonding" *J. Org. Chem.* **2003**, *68*,1721-1728.
36. Adam, W.; Alsters, P L.; Neumann, R.; Saha-Möller, C. R.; Sloboda-Rozner, D.; Zhang, R*, "A New Highly Selective Method for the Catalytic Epoxidation of Chiral Allylic Alcohols by Sandwich-Type Polyoxometalates with Hydrogen Peroxide " *Synlett*, **2002**, 2011-2014.
37. Zhang, R; Yu, W.-Y; Che, C.-M. "Catalytic Enantioselective Oxidation of Aromatic Hydrocarbons with D_4-Symmetric Chiral Ruthenium Porphyrin Catalysts". *Tetrahedron: Asymmetry* **2005**, *16*, 3520-3526.
38. Che, C.-M.; Zhang, J.-L.; Zhang, R.; Huang, J.-S.; Lai, T.-S.; Tsui, W.-M.; Zhou, X.-G.; Zhou, Z.-Y.; Chang, C.-K. "Hydrocarbon Oxidation by β -Halogenated Dioxoruthenium(VI) Porphyrin Complexes: Effect of Reduction Potential ($Ru^{VI/V}$) and C-H Bond-Dissociation Energy on Rate Constants" *Chem. Eur. J.* **2005**, *11*, 7040-7053.
39. Zhang, R.; Yu, W.-Y.; Sun, H.-Z.; Liu, W.-S.; Che, C. -M. "Stereo- and Enantioselective Alkene Epoxidations. A Comparative Study of the D_4- and D_2-Symmetric Homochiral *trans*-Dioxoruthenium(VI) Porphyrins", *Chem. Eur. J.* **2002**, *8*, 2495-2507.
40. Chen, J.; Zhang, R.; Hu, J.; Li, X. "Selective catalytic oxidation of mixed xylene by hydroxamic acid cobalt complex Co(BPHA)2". *Huaxue Yanjiu Yu Yingyong,* **2002**, 14, 178-181.
41. Zhang, R.; Yu, W.-Y.; Wong, K.-Y.; Che, C.-M. : "Highly Efficient Asymmetric Epoxidation of Alkenes with a D_4-symmetric Chiral Dichlororuthenium(IV) Porphyrin Catalyst" *J. Org. Chem.* **2001**, *66*, 8145-8153.
42. Liu, W.-S.; Zhang, R.; Huang, J.-S.; Che, C.-M.; Peng, S.-M. : "Synthesis and X-ray crystal structure of a chiral molybdenum porphyrin and its catalytic behavior toward asymmetric epoxidation of aromatic alkenes", *J. Organomet. Chem.* **2001**, *634*, 34-38.
43. Zhang, R.; Yu, W.-Y.; Lai, T.-S.; Che, C. -M. : "Enantioselective hydroxylation of benzylic C-H bonds by D_4-symmetric chiral oxoruthenium porphyrins" *Chem. Commun*., **1999**, 1791-1792.
44. Zhang, R.; Yu, W.-Y.; Lai, T.-S.; Che, C.-M. "Enantioselective epoxidation of *trans*-disubstituted alkenes by D_2-symmetric chiral dioxoruthenium(VI) porphyrins" *Chem. Commun*. **1999**, 409-410.
45. Lai, T.-S.; Kwong, H.-L.; Zhang, R.; Che, C.-M. "Stoichiometric enantioselective alkene epoxidation with a chiral dioxoruthenium (VI) D_4-porphyrinato complex." *J. Chem. Soc., Dalton Trans*. **1998**, 3559-3564.
46. Lai, T.-S.; Zhang, R.; Cheung, K.-K.; Kwong, H.-L.; Che, C.-M. "Aerobic enantioselective alkene epoxidation by a chiral *trans*-dioxo(D_4-porphyrinato)ruthenium (VI) complex." *Chem. Commun*. **1998**, 1583-1584.
47. Alsters, P. L.; Witte, P. T.; Neumann, R.; Rozner, Dorit S.; Adam, W.; Zhang, R.; Reedijk, J.; Gamez, P.; ten Elshof, J. E.; Chowdhury, S. R.."Fine-tuning and recycling of homogeneous tungstate and polytungstate epoxidation catalysts" 2007, *Preprints - American Chemical Society, Division of Petroleum Chemistry*, *52*(2), 208-212.

48. Newcomb,M.; Zhang, R.; Chandrasena, R. E. P.; Pan, Z.; Harischandra, D.; Kim, H.-Y.; Horner, J. H. "Photochemical generation of high-valent porphyrin-metal-oxo derivatives" *J. Porph. Phthal.* 2006, *10*, 356.
49. Newcomb, M.; Zhang, R.; Chandrasena, R. E. P.; Horner, J. H.; Martinez, E., II; Harischandra, D. N.; Pan, Z. Laser flash photolysis production of compound I and its relatives. International Conference on Cytochromes P450: Biochemistry, Biophysics and Bioinformatics, Proceedings, 14th, Dallas, TX, United States, 2005, 41-47.
50. Zhang, R.; Horner, J. H.; Newcomb, M.: Laser Flash Photolysis (LFP) Generation and Kinetic Studies of High-Valent Porphyrin Metal-Oxo Intermediates. *J. Porph. Phthal.* 2004, *8*, 911.

2 Theses Completed

Graduate (MS)

1 Haleh Jeddi, "Synthesis, kinetic and catalytic studies of manganese complexes with corrole and porphyrin ligands", 2017.
2 Ka Wai Kwong, " Visible light generation of high-valent metal-oxo intermediates and a biomimetic oxidation catalyzed by manganese(III) porphyrins and iodobenzene diacetate", 2016.
3 Weilong Luo, "Synthetic investigation on the biomimetic metal-catalyzed sulfoxidation and photochemical generation of a highly reactive ruthenium(V)-oxo porphyrin", 2016.
4 Aaron Carver, "Selective oxidations by iron(III) porphyrins and iron(III) corroles", 2014
5 Tse-Hong Chen, "Selective oxidations by metalloporphyrins and metallocorroles", 2014
6 Nawras Asiri, " Selective catalytic oxidation of organic sulfides by iron(III) porphyrin catalysts and generation of iron(IV)-oxo porphyrin radical cations", 2013
7 Eric Vanover, "Photochemical oxidation studies of porphyrin ruthenium complexes", 2012
8 Yan Huang, "Synthesis, kinetic and photocatalytic studies of porphyrin-ruthenium-oxo complexes", 2010.
9 Chris Abebrese, " Kinetic studies of the sulfoxidation of aryl methyl sulfides by trans-dioxoruhtenium(VI) porphyrin complexes, 2010.

Undergraduate (Honors)

10 Zhi-Bo Yuan, "Synthesis and characterization of metallocorrole and metalloporphyrin complexes for catalytic oxidations", 2013 (Pass with Distinction)
11 Ka Wai Kwong, " Synthetic and mechanistic studies of catalytic oxidations by manganese(III) porphyrins and iodobenzene diacetate", 2015 (Pass with Distinction)

3 Invited Seminar

1. Biomimetic Studies and Photochemical Generation of Highly Reactive Metal-Oxo Species for the Selective Aerobic Oxidations, University of Tennessee at Martin, April 27, 2017.
2. Photochemical Generation of Highly Reactive Metal-Oxo Species for the Selective Aerobic Oxidations, Department of Chemistry, University of Louisville, September 2013, KY.
3. Photocatalytic aerobic oxidations by ruthenium porphyrins using visible light and molecular oxygen, 41st Annual Conference of NATAS, August 2013, Bowling Green, KY.

4. Integration of NMR into chemistry curriculum at WKU and ECTC and assessment of factors leading to a successful collaboration between 2- and 4-year colleges" NSF-Catalyzed Innovations Symposium**,** August 2012 at Philly, PA.
5. Finding Oxidant in Cytochrome P450 enzyme-catalyzed oxidations, Chemistry College, Sichuan University, January 2009, Chengdu, China.

4 Presentations and Abstracts (Student-presenter, since 2014 from a total of 81)

1. Ngo Fung Lee, Ka Wai Kwong, Rui Zhang, Photochemical Generation and Kinetic Studies of Manganese(V)-Oxo Corroles, 253rd National Meeting of the American Chemical Society Spring, 2017, San Francisco, CA.
2. Ngo Fung Lee, Ka Wai Kwong, Rui Zhang, Photochemical Generation and Kinetic Studies of Manganese(V)-Oxo Corroles (oral), 47th Annual WKU Student Research Conference, 2017, Bowling Green, KY.
3. Dhamsh Patel, Ka Wai Kwong, Jonathan Malone, Rui Zhang, Photochemical Generation and Kinetic Studies of Iron(IV)-Oxo Poprhyrins, 47th Annual WKU Student Research Conference, 2017, Bowling Green, KY.
4. Mike Winchester, Rui Zhang, Kinetic studies of organic reductants with an electron-deficient manganese(IV)-oxo porphyrin (oral), 47th Annual WKU Student Research Conference, 2017, Bowling Green, KY.
5. Haleh Jeddi, Rui Zhang, Kinetic and Mechanistic Studies of an Electron-Deficient Manganese(V)-oxo Corrole, 102st Annual Meeting of the Kentucky Academy of Science, 2016, Louisville, KY. (First place in the Organic session)
6. Ka Wai Kwong, Jonathan Malone, Mike Winchester, Rui Zhang, Visible light generation of high-valent iron(V)-oxo-porphyrin and manganese(V)-oxo-corrole, Mississippi State University Andrews Graduate Research Symposium, May 2016, Starkville, MS
6. Jeddi Haleh, Weilong Luo, Rui Zhang, Kinetic and Mechanistic Studies of a Manganese(V)-oxo Corrole. University of Kentucky Undergraduate Research in Chemistry Regional Poster Competition, 2016, Lexington, KY.
7. Jonathan Malone, Tse-Hong Chen, Ka Wai Kwong, Rui Zhang, Visible Light Generation of High-Valent Porphyrin-Iron-Oxo Intermediates, University of Kentucky Undergraduate Research in Chemistry Regional Poster Competition, 2016, Lexington, KY.
8. Davis Ranburger, Ka Wai Kwong, Ngo Fung Lee, Rui Zhang, Synthetic and Spectral Studies of Manganese 5,10,15-tris(pentafluorophenyl)corrole, 46th Annual WKU Student Research Conference, 2016, Bowling Green, KY.
9. Ngo Fung Lee, Ka Wai Kwong, Jonathan Malone, Rui Zhang, Synthesis and Spectra Studies of Manganese(III) and Manganese(V)-Oxo Corroles, 46th Annual WKU Student Research Conference, 2016, Bowling Green, KY.
10. Weilong Luo, Rui Zhang, Synthetic and catalytic oxidation studies by metalloporphyrin and metallocorrole, 46th Annual WKU Student Research Conference, 2016, Bowling Green, KY.
11. Ka Wai Kwong, Rui Zhang, Synthetic and Mechanistic Studies of Bis-Porphyrin-Manganese(III) μ-Oxo Dimer, 46th Annual WKU Student Research Conference, 2016, Bowling Green, KY.
12. Jeddi Haleh, Weilong Luo, Rui Zhang, Kinetic Studies of Oxygen Atom Transfer Reactions by an Oxo-manganese(v) Corrole, 46th Annual WKU Student Research Conference, 2016, Bowling Green, KY.
13. Jonathan Malone, Tse-Hong Chen, Ka Wai Kwong, Rui Zhang, Visible Light Generation of High-Valent Iron-Oxo Intermediates, 46th Annual WKU Student Research Conference, 2016, Bowling Green, KY.

14. Jeddi Haleh, Weilong Luo, Rui Zhang, Kinetic and Competition studies of Oxygen Atom Transfer Reactions with a Corrole-manganese(V)-oxo Species. 251st National Meeting of the American Chemical Society Spring, 2016, San Diego, CA.
15. Weilong Luo, Rui Zhang, Solvent effect on selective sulfoxidation catalyzed by manganese(III) corrole complexes, 101st Annual Meeting of the Kentucky Academy of Science, 2015, Highland Heights, KY.
16. Ka Wai Kwong, Tse-Hong Chen, Weilong Luo, Jonathan Malone, Rui Zhang, Iron (III) corrole–catalyzed selective sulfoxidations with iodobenzene diacetate, 101st Annual Meeting of the Kentucky Academy of Science, 2015, Highland Heights, KY. (First place in the Organic oral session)
17. Jeddi Haleh, Weilong Luo, Rui Zhang, Kinetic and Catalytic Studies of a Corrole-manganese Species, 101st Annual Meeting of the Kentucky Academy of Science, 2015, Highland Heights, KY. (First place in the Organic/Inorganic poster session)
18. Jonathan Malone, Nawras Asiri, Tse-Hong Chen, Ka Wai Kwong, Rui Zhang, Photochemical Generation of Iron (IV)-Oxo Porphyrin Radical Cations and Iron (IV)-Oxo Porphyrin Derivatives, 101st Annual Meeting of the Kentucky Academy of Science, 2015, Highland Heights, KY.
19. Ka Wai Kwong, Tse-Hong Chen, Weilong Luo, Jonathan Malone, Rui Zhang, Highly selective oxidation of sulfides to sulfoxides catalyzed by iron (III) corroles with iodobenzene diacetate, 67th Annual Southeastern Regional Meeting of the American Chemical Society, 2015, Memphis, TN.
20. Jeddi Haleh, Weilong Luo, Rui Zhang, Synthesis and Kinetic Studies of a Manganese(V)-oxo Corrole, 67th Annual Southeastern Regional Meeting of the American Chemical Society, 2015, Memphis, TN.
21. Jonathan Malone, Nawras Asiri, Tse-Hong Chen, Ka Wai Kwong, Rui Zhang, Ligand Control in the Generation of High-Valent Porphyrin-Iron-Oxo Derivatives, 67th Annual Southeastern Regional Meeting of the American Chemical Society, 2015, Memphis, TN.
22. Kwong, K. W.; Chen, T.-H.; Zhang, R. Synthetic and Mechanistic Studies of Catalytic Oxidation by Manganese(III) Porphyrin and Iodobenzene Diacetate. 249th American Chemistry Society National Meeting & Exposition, 2015, Denver, CO.
23. Luo, W. L.; Chen, T.-H.; Yuan, Z.; Zhang, R. Visible light-promoted selective sulfoxidations catalyzed by ruthenium porphyrins with iodobenzene diacetate. 249th American Chemistry Society National Meeting & Exposition, 2015, Denver, CO.
24. Chen, T.-H.; Kwong, K. W.; Luo, W. L.; Carver, A.; and Zhang, R. A Highly efficient and selective epoxidation catalyzed by iron corrole complexes and iodobenzene diacetate. 249th American Chemistry Society National Meeting & Exposition, 2015, Denver, CO.
25. Kwong, K. W.; Chen, T.-H.; Zhang, R. Synthetic and Mechanistic Studies of Catalytic Oxidation by Manganese(III) Porphyrin with Iodobenzene Diacetate. 45th Annual Western Kentucky University Student Research Conference (2015), Bowling Green, KY. (Award Wining Presentation)
26. Jeddi, H.; Kwong, K. W.; Zhang, R. Biomimetic studies of Cytochrome P450 enzymes: Synthesis of porphyrin ligands and their metal complexes. 45th Annual WKU Student Research Conference (2015), Bowling Green, KY. (Award Wining Presentation)
27. Luo, W. L.; Zhang, R. Selective sulfoxidation catalyzed by manganese(III) porphyrin complexes with different axial ligands. WKU Student Research Conference (2015), Bowling Green, KY.
28. Chen, T.-H.; Kwong, K. W.; Zhang, R. Synthetic and mechanistic studies of highly efficient catalytic oxidations by iron(III) corrole with a mild oxygen source. 100th Annual Meeting of Kentucky Academy of Science (2014), Lexington, Kentucky. (1st Place oral presentation in organic/inorganic chemistry divisions)
29. Luo, W. L.; Vanover, E.; Zhang, R. An Efficient Photocatalytic Oxidation through a Highly Reactive Porphyrin-Ruthenium(V)-Oxo Species. 100th Annual Meeting of Kentucky Academy of Science (2014), Lexington, Kentucky.

30. Kwong, K. W.; Chen, T.-H.; Zhang, R. Highly selective epoxidation catalysis by manganese(III) porphyrin complexes with iodobenzene diacetate. 100th Annual Meeting of Kentucky Academy of Science (2014), Lexington, Kentucky.
31. Luo, W. L.; Vanover, E.; Zhang, R. Photochemical generation and kinetic study of a highly reactive porphyrin-ruthenium(V)-oxo species for Photocatalytic Aerobic Oxidations. 66th Southeastern Regional Meeting of ACS (SERMACS 2014), Nashville, TN.
32. Kwong, K. W.; Chen, T.-H.; Zhang, R. Highly Efficient and Selective Oxidations Catalyzed by Manganese(III) Porphyrin Complexes with Iodobenzene Diacetate. 66th Southeastern Regional Meeting of ACS (SERMACS 2014), Nashville, TN.
33. Chen, T.-H.; Kwong, K. W.; Zhang, R. "Highly Efficient Catalytic Oxidations by an Iron(III) Corrole Complex with a Mild Oxygen Source." 66th Southeastern Regional Meeting of ACS (SERMACS 2014), Nashville, TN.
34. Luo W. L.; Vanover, E.; Zhang, R. Photochemical generation of a highly reactive porphyrin-ruthenium(V)-oxo species for the selective oxidative catalysis, 248th ACS national meeting, 2014 at San Francisco, CA.
35. Aaron Carver, Tse-Hong Chen, and Rui Zhang, Synthesis and Catalytic Studies of Iron(III) Corrole towards Selective Oxidation of Organic Sulfides, 2014 WKU Student Research Conference, Bowling Green, Kentucky.
36. Weilong Luo, Tse-Hong Chen, and Rui Zhang, Axial ligand effect on catalytic oxidation of sulfides by manganese (III) porphyrin complexes, 2014 WKU Student Research Conference, Bowling Green, Kentucky.

CURRENT UNDERGRADUATE & GRADUATE STUDENTS

- Davis Ranburger
- Jonathan, Malone
- Benjamin Kash (Gatten Academy)
- Dana Biechele-Speziale

- Haleh, Jeddi (5-year BS/MS)
- Haiyan, Liu
- Mike Winchester
- Ngo Fung Lee
- Dharmesh Patel
- Wei-Long Luo, GRSF fellowship received in 2014, FUSE grant received in 2013

AFFILIATIONS

- Invited Journal Reviewer (*J. Org. Chem. & Org.Lett.*), 2003—present
- Proposal reviewer for NSF CAT(Chemical Catalysis) program
- Editorial Board Member for ISRN Phyical Chemistry 2011—present
- Member of American Chemical Society (ACS)
- Member of the Society of Porphyrins & Phthalocyanines (SPP)
- Member of Kentucky Academy of Science (KAS)