

XINYANG SUN

Department of Chemistry and Biochemistry, The University of Alabama,
3076 Shelby Hall, Tuscaloosa, AL 35487.

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EDUCATION

Aug. 2023-Apr. 2025 Ph.D, Chemistry

The University of Alabama, Tuscaloosa, AL. US

Dissertation: *Synthesis and Photophysics of Visible and Near-infrared (NIR) Absorbing Iridium (III)/Ruthenium (II)/Osmium (II) Photosensitizers for Phototherapy*

Advisor: Dr. Wenfang Sun

Aug. 2022-Aug. 2023 Graduate Student, Chemistry GPA:4.0

The University of Alabama, Tuscaloosa, AL. US

Aug. 2020-Aug. 2022 Graduate Student, Chemistry GPA:3.83

North Dakota State University, Fargo, ND, US

Sept. 2011-Jun. 2014 MS, Chemistry

China University of Petroleum, Qingdao, Shandong, China

Dissertation: *Study on the Preparation and Coupling Reactions of Organomanganese Compounds*

Advisors: Prof. Cuiyu Jiang & Dr. Zhihua Peng

Sept. 2006-Jun. 2010 B. S. Material Chemistry

Shandong Agricultural University, Tai'an, Shandong, China

RESEARCH SKILLS

Organic synthesis, NMR spectroscopy, High resolution electrospray ionization (ESI⁺) mass spectrometry, Preparative and analytical HPLC, Teledyne ISCO combiFlash EZ prep UV preparative flash chromatograph system, UV-vis spectroscopy, Ultrafast system for transient absorption, Edinburgh FLS 1000 spectrometer for emission.

PROFESSIONAL EXPERIENCE

Aug. 2025-now. Postdoc Researcher

Department of Chemistry and Biochemistry, University of Cincinnati

Advisor: Dr. Yujie Sun

- Electrocatalysis/Photocatalysis

Oct. 2019-Aug. 2020 Visiting Scholar

Department of Chemistry and Biochemistry, North Dakota State University

Advisor: Dr. Wenfang Sun

- Design, synthesis, and characterizations of seven tetradentate N_2O_2 chelated boron/indium dipyrromethene complexes, photophysical studies including concentration dependence study, solvent dependence study, emission and excitation spectra.

Oct. 2016-Aug. 2019 Research Assistant

Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University, Hong Kong, China

- Do research in Dr. Ga-lai Law Group (attached to Dr. Wong Wing Tak group).
- Finished the synthesis of 12 Porphyrin-copper/zinc complexes and the characterizations (MS, NMR, ICP-OES, HPLC, UV-vis absorption and emission spectra).
- Weekly group meeting and monthly progress report.

Oct. 2014-Jan. 2016 Organic Synthesis Researcher

Pharmaron Beijing New Drug Co., Ltd. Beijing, China

- Search literatures and design the synthetic routes for the target compounds and analyze, discuss, and overcome all kinds of problems.
- Write e-note or ELN online and report the researching progress to group leader every week.
- Do the experiments through small-scale test and then scaling-up test, analyze the results by LCMS or NMR and then purify by column chromatography or other methods to obtain the pure final or intermediate product, submit and ship the product to customers.

TEACHING EXPERIENCE

- Teaching Assistant, CH-105-014, CH-105-015, CH-105-037, Spring 2024
- Teaching Assistant, CH-101-032, CH-101-052, CH-101-076, Fall 2024
- Teaching Assistant, CH-237, Spring 2025

AWARD

Dunbar Academic Excellence Award, North Dakota State University, Fargo, Spring 2022

Linkedin: <https://www.linkedin.com/in/xinyangsun-alabama/>

PUBLICATIONS (Peer-Reviewed)

ResearchGate: <https://www.researchgate.net/profile/Xinyang-Sun-2>

Google Scholar: <https://scholar.google.com/citations?user=2qQ3dmUAAAAJ&hl=en>

ORCID: <https://orcid.org/0009-0003-7766-5692>

Scopus ID: 57296329400

1. Sun, X.; Cole, H. D.; Shi, G.; Oas, V.; Talgatov, A.; Cameron, C. G.; Kilina, S.; McFarland, S. A.; Sun, W., Hypoxia-Active Iridium (III) Bis-terpyridine Complexes Bearing Oligothieryl Substituents: Synthesis, Photophysics, and Phototoxicity toward Cancer Cells. *Inorg. Chem.* **2024**, 63, 21323-21335.
2. Xu, W.; Lystrom, L.; Pan, Y.; Sun, X.; Thomas, S. A.; Kilina, S. V.; Yang, Z.; Wang, H.; Hobbie, E. K.; Sun, W., Mono-/Bimetallic Neutral Iridium (III) Complexes Bearing Diketopyrrolopyrrole-Substituted N-Heterocyclic Carbene Ligands: Synthesis and Photophysics. *Inorg. Chem.* **2021**, 60, 15278-15290.
3. Xu, W.; Gao, C.; Sun, X.; Tai, W. C.-S.; Lung, H. L.; Law, G.-L., Design, synthesis and comparison of water-soluble phthalocyanine/porphyrin analogues and their inhibition effects on A β 42 fibrillization. *Inorg. Chem. Front.* **2021**, 8, 3501-3513.
4. Zheng, P.; Chaibuth, P.; Lo, W. S.; Jin, W.; Sun, X.; Meksawangwong, S.; Punyain, W.; Gál, M.; Gu, Y.; Chan, W. T. K., Two-Photon Excitable Iridium Complex Containing Dipyrzolyltriazine as Cellular Imaging Dyes. *Eur. J. Inorg. Chem.* **2018**, 2018, 4533-4542.
5. Peng, Z.; Li, N.; Sun, X.; Wang, F.; Xu, L.; Jiang, C.; Song, L.; Yan, Z.-F., The transition-metal-catalyst-free oxidative homocoupling of organomanganese reagents prepared by the insertion of magnesium into organic halides in the presence of MnCl₂· 2LiCl. *Org. Biomol. Chem.* **2014**, 12, 7800-7809.

Manuscripts in Preparation or Revision for Peer-Reviewed Journals

1. X. Sun, J. O'Shea, A. J.-L. Ayitou, W. Sun,* "Tetradentate N₂O₂ Chelated Boron/Indium Dipyrromethene Complexes: Synthesis and Photophysical Properties", manuscript drafted, to be revised (2024)
2. X. Sun, G. Shi, V. Oas, C. G. Cameron, S. Kilina, S. A. McFarland,* W. Sun* "Impact of Metal Center on Photophysics and in vitro Photodynamic Therapeutic Activities of

- Ru(II)/Os(II)/Ir(III) Bis-terpyridine Complexes Bearing Oligothienyl Substituents” manuscript drafted, to be revised (2024)
3. X. Sun, G. Sun, V. Oas, S. Kilina, H. Afrin, Y. Bao, K. L. Wooley, W. Sun* “Bimetallic Ir(III)/Ru(II)/Os(II) Bis-terpyridine Complexes Bearing Diketopyrrolopyrrole-Substituted Oligothienyl Substituents: Synthesis, Photophysics, and *in vitro* Photodynamic Therapy” manuscript drafted, to be revised (2024)
 4. X. Sun, S. Maharajan, L. Lo, W. Sun* “Novel Near-Infrared (NIR) Absorbing Mono-/Bimetallic Pyrrolopyrrole Cyanine (PPCy) Iridium (III) Complexes: Synthesis, Photophysics, and Phototoxicity Toward Cancer Cells” manuscript drafted, to be revised (2024)
 5. X. Sun, W. Sun* “Enantiomeric Pure Bimetallic Ir(III) Complexes Bridged by Bipyridine-Substituted Diketopyrrolopyrrole Ligands: Synthesis and Photophysics” manuscript drafted, to be revised (2024)

PUBLICATIONS (Non-Peer-Reviewed Conference Proceeding Abstract)

1. X. Sun, H. D. Cole, G. Shi, C. G. Cameron, S. A. McFarland, W. Sun^{a*} “Hypoxia-active Ir(III)/Ru(II)/Os(II) Bis-terpyridine Complexes Bearing Oligothienyl Substituent: Synthesis, Photophysics, and *in vitro* Photodynamic Therapy”, *International Conference on Coordination Chemistry (ICCC) Abstract Book* (Jul. 28th – Aug. 2nd, Fort Collins, CO, US).
2. X. Sun, H. D. Cole, G. Shi, C. G. Cameron, S. A. McFarland, W. Sun^{a*} “Hypoxia-active Ir(III)/Ru(II)/Os(II) Bis-terpyridine Complexes Bearing Oligothienyl Substituent: Synthesis, Photophysics, and *in vitro* Photodynamic Therapy”, Poster Presentation, *Inter-America Photochemical Society (I-APS) Abstract Book* (Jan. 2nd - 5th, 2025, Miramar Beach, FL, US).

CONFERENCES

1. Poster Presentation, International Conference on Coordination Chemistry (ICCC), Jul. 28th – Aug. 2nd, 2024, Fort Collins, CO, US.
2. Poster Presentation, Inter-America Photochemical Society (I-APS), Jan. 2nd - 5th, 2025, Miramar Beach, FL, US.

REFEREES

1. **Dr. Wenfang Sun**, Professor & Robert Ramsay Chair, Department of Chemistry and Biochemistry, The University of Alabama, Tuscaloosa, Alabama, 35487-0336, United States, Email: wsun15@ua.edu Phone: (205)348-5807
2. **Dr. Mukund P. Sibi**, Distinguished Professor, Department of Chemistry and Biochemistry, North Dakota State University, Fargo, North Dakota, 58108-6050, United States, Email: mukund.sibi@ndsu.edu Phone: (701) 231-8251

3. **Dr. Gregory R. Cook**, *Professor & Chair*, Department of Chemistry and Biochemistry, North Dakota State University, Fargo, North Dakota, 58108-6050, United States, Email: gregory.cook@ndsu.edu