Baoming Zhao, PhD

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Education

Ph.D. in Chemistry, 2016

Washington State University – Pullman, WA

Advisor: Prof. Alex Li

Dissertation Title: Synthesis, Structure and Applications of Stimuli-Responsive Rhodamine Derivatives

- 2012 Chow Scholarship
- GPA: 3.85/4.0

B.S. in Materials Chemistry, 2008

Nankai University – Tianjin, China

Advisor: Prof. Jin Qu

Research Project: N-thiobenzoyl 1-methylhistidine methyl ester as a catalyst for kinetic resolution of racemic secondary alcohols

- 2008 Fellow of "Hundred Reserve Young Teachers"
- 2007 Shanglin-Meiling Scholarship
- 2006 Guo-Long Scholarship
- 2005 The First Prize Scholarship

Working Experience

Feb 2023 – Current, *Staff Scientist,* Composite Materials and Engineering Center, WSU

Jul 2019 – Feb 2023, *Postdoctoral Research Associate,* Composite Materials and Engineering Center, WSU

Sep 2018 – Jun 2019, *Research Associate,* Biological Systems Engineering, Washington State University

Jan 2018 – Aug 2018, *Chemist*, XCG Design Corp, Seattle, WA

Mar 2017 – Dec 2017, *Research/Teaching Associate*, Department of Chemistry, Washington State University

Aug 2011 – Dec 2016, *Teaching Assistant,* Department of Chemistry, Washington State University

Aug 2008 – Aug 2011, *Research Assistant,* Department of Chemistry, Washington State University

Teaching Experience

CHEM 101 Introduction to Chemistry, 2 semesters, 4 lab sections, student evaluation: **4.5/5.0**

CHEM 102 Chemistry Related to Life Sciences, 1 semester, 2 lab sections, student evaluation: **4.6/5.0**

CHEM 105 Principles of Chemistry I, 4 semesters, 8 lab sections, student evaluation: **4.5 - 4.7/5.0**

CHEM 106 Principles of Chemistry II, 7 semesters, 15 lab sections, student evaluation: **4.6 – 4.8/5.0**

Publications

1. **Baoming Zhao**, Cheng Hao, Yu-Chung Chang, Yiding Cao, Tuan Liu, Mingen Fei, Lin Shao, Jinwen Zhang*. Photo-curing 3D Printing of Thermosetting Sacrificial Tooling for Fabricating Fiber-Reinforced Hollow Composites, *Advanced Functional Materials*, **2023**, DOI: 10.1002/adfm.202213663.

2. **Baoming Zhao**, Yue Wu, Wei Wan, Weihong Zhu, Alexander DQ Li*. Molecular modulation spectroscopy: Individual molecular spectra accurately deconvoluted from interfering systems via orthogonal reactions, *Journal of Photochemistry and Photobiology A: Chemistry*, **2023**, 436, 114370.
3. Mingen Fei, Yu-Chung Chang, Cheng Hao, Lin Shao, Wangcheng Liu, **Baoming Zhao***, Jinwen Zhang*. Highly engineerable Schiff base polymer matrix with facile fiber composite manufacturability and hydrothermal recyclability, *Composites Part B: Engineering*, **2023**, 248, 110366.
4. Tuan Liu, Lin Shao, Baoming Zhao, Yu-Chung Chang, Jinwen Zhang*. Progress in Chemical Recycling of Carbon Fiber Reinforced Epoxy Composites, *Macromolecular Rapid Communications*, **2022**, 43, 2200538.
5. Lin Shao, Yu-Chung Chang*, Cheng Hao, Ming-en Fei, Baoming Zhao, Brian J. Bliss, Jinwen Zhang*. A chemical approach for the future of PLA upcycling: from plastic wastes to new 3D printing materials, *Green Chemistry*, **2022**, Advance Article.
6. Mingen Fei, Tuan Liu*, Baoming Zhao, Anthony Otero, Yu-Chung Chang, Jinwen Zhang*. From Glassy Plastic to Ductile Elastomer: Vegetable Oil-Based UV-Curable Vitrimers and Their Potential Use in 3D Printing, *ACS Applied Polymer Materials,* **2021**, 3, 2470 – 2479.
7. Shuai Zhang, Tuan Liu*, Cheng Hao, Anna Mikkelsen, Baoming Zhao, Jinwen Zhang*. A Hempseed Oil based Covalent Adaptable Epoxy-Amine Network and Its Potential Use for Room Temperature Curable Coatings, *ACS Sustainable Chemistry & Engineering,* **2020**, 8, 14964 – 14974.
8. Shuai Zhang, Tuan Liu*, Baoming Zhao, Christina Verdi, Wangcheng Liu, Cheng Hao, Jinwen Zhang*. Shape memory Poly(lactic acid) binary blends with unusual fluorescence, *Polymer*, **2020**, 209, 122980.
9. Tuan Liu, Mingen Fei, Baoming Zhao, Jinwen Zhang*. Progress in Biobased Vitrimers, *Acta Polymerica Sinica,* **2020**, 51, 817 – 832.
10. Tuan Liu, Baoming Zhao, Jinwen Zhang*. Recent development of repairable, malleable and recyclable thermosetting polymers through dynamic transesterification, *Polymer,* **2020**, 194, 122392.
11. Yingfa Shan; Tuan Liu; Baoming Zhao; Cheng Hao; Shuai Zhang; Yingyi Li; Yingzhu Wu; Jinwen Zhang.* A Renewable Dynamic Covalent Network Based on Itaconic Anhydride Crosslinked Polyglycerol: Adaptability, UV Blocking and Fluorescence, *Chemical Engineering Journal **2020***, DOI: 10.1016/j.cej.2019.123960
12. Chen, J.; Ziegler, A. W.; Zhao, B.; Wan, W.; Li, A. D. Chemomechanical-Force-Induced Folding-Unfolding Directly Controls Distinct Fluorescence Dual-Color Switching. *Chem. Commun.* **2017**, 53, 4993-4996.
13. Shaller, A. D.; Wan, W.; Zhao, B.; Li, A. D. Chromophoric and Dendritic Phosphoramidites Enable Construction of Functional Dendrimers with Exceptional Brightness and Water Solubility. *Chem. Eur. J.* **2014**, 20, 12165-12171.
14. Hu, D.; Zhao, B.; Xie, Y.; Orr, G.; Li, A. D. Understanding Super-Resolution Nanoscopy and its Biological Applications in Cell Imaging. *Phys. Chem. Chem. Phys.* **2013**, 15, 14856-14861.

15. Lv, Y.; Liu, H.; Zhao, B.; Tian, Z.; Li, A. D. Tuning Photoswitchable Dual-Color Fluorescence from Core-Shell Polymer Nanoparticles. *Isr. J. Chem.* **2013**, 53, 294-302.

Funded Projects:

1. Development of Hempseed Oil-Based Lignin-Containing Isocyanate-Free Polyhydroxyurethanes as Recyclable Plastics and Foams. Baoming Zhao (Principal Investigator), Xiao Zhang, Jinwen Zhang. Sponsored by Center for Bioplastics and Biocomposites: $59,920
2. Reprintable Resins for Sustainable 3D Printing and Their Application in Composite Fabrication. Jinwen Zhang, Baoming Zhao (co-PI). Sponsored by WSU Commercialization Gap Fund: $39,492.80

Presentations:

1. Baoming Zhao; Cheng Hao; Yu-Chung Chang; Jinwen Zhang. Photo-curing 3D printing of sacrificial tooling for fabricating hollow lightweight composites. *Dynamic Covalent & Supramolecular Polymer Networks, ACS Fall 2022*. ***2022***, Chicago, IL.

2. Baoming Zhao; Yu-Chung Chang; Cheng Hao; Jinwen Zhang. Photo-Curing 3D Printing of Sacrificial Tooling for Fabricating Hollow Lightweight Composites. *AM Applications in Aviation symposium, ASTM International Conference on Additive Manufacturing (ASTM ICAM 2022).* ***2022****, Orlando, FL.*

3. Xiong, X.; Zhang, Y.; Zhao, B.; Chen, S. Improvement of lipid-based chemicals production by overcoming metabolism overflow in oleaginous yeast *Yarrowia lipolytica*. *41st Symposium on Biotechnology for Fuels and Chemicals.* ***2019****, Seattle, WA.*

Provisional Patents and Disclosures:

1. Jinwen Zhang, Baoming Zhao. Preparation of Recyclable Resins with Cleavable Crosslinkers. Application #: 63/385,752
2. Jinwen Zhang, Ming-en Fei, Baoming Zhao. A Method of Preparing Highly Engineerable Schiff base Vitrimer Materials. Disclosure-23-00028.
3. Jinwen Zhang, Baoming Zhao, Wangcheng Liu, Yiding Cao. Methods for catalytic degradation of thermosetting polymers at atmospheric pressure. Disclosure-23-00047.

Volunteer Work

2019 – current, Reviewer for *ACS Applied Materials & Interfaces*, *Additive Manufacturing*, *Biomacromolecules*, *Industrial Crops and Products*, *Journal of Molecular Liquids*, and *ACS Applied Polymer Materials*.

2010 – 2011, *Cougar Quest Instructor,* teaching and demonstrating photoswitching chemistry to high school students, Washington State University

2006 – 2007, *President of Student Union,* planning and managing student activity events, Department of Chemistry, Nankai University