

# Zhen Xiao

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## EDUCATION BACKGROUND

- 1) Postdoctoral Scholar, 2022-present  
Stanford University, School of Medicine, Department of Radiology, Stanford, California, USA
- 2) PhD in Chemistry, 2017-2022  
Brown University, Department of Chemistry, Providence, Rhode Island, USA
- 3) Summer School for Electron Microscopy, 2018  
Harvard University, Center for Nanoscale Systems, Boston, Massachusetts, USA
- 4) Research Intern, 2016  
University of New Brunswick, Department of Chemistry, New Brunswick, Canada
- 5) Bachelor of Science, GPA: **3.85/4.00**, 2013-2017  
Beihang University (BUAA), School of Chemistry and Environment, Beijing, China

## SELECTED PUBLICATIONS

- 1) **Xiao, Z.**, Zhang, Q., et al. Synthesis and Application of Magnetic Nanocrystal Clusters. *Industrial & Engineering Chemistry Research*, 2022, 61, 22, 7613–7625
- 2) Zhang, Q., **Xiao, Z.** (co-first), Colvin, V.L., et al. The Giant Susceptibility of Magnetic Nanoclusters. *Nature*, in preparation
- 3) Sebesta, C., Torres, D., Wang, B., Li, Z., Duret, G., Jiang, K., **Xiao, Z.**, et al. Sub-second Multi-channel Magnetic Control of Select Neural Circuits in Behaving Flies. *Nature Materials*, 2022, 21, 951-958
- 4) **Xiao, Z.**, Colvin, V.L., et al. Forming Libraries of Uniform Magnetic Multicore Nanoparticles with Tunable Dimensions and their Applications. *ACS Applied Materials & Interfaces*, 2020, 12, 41932–41941
- 5) **Xiao, Z.**, Zhu, Y., et al. Homogeneously Dispersed Co<sub>9</sub>S<sub>8</sub> Anchored on Nitrogen and Sulfur Co-Doped Carbon Derived from Soybean as Bifunctional Oxygen Electrocatalysts and Supercapacitors. *ACS Applied Materials & Interfaces*, 2018, 10, 16436-16448

## RESEARCH EXPERIENCE

- 1) Molecular Imaging Program at Stanford, 2022-present, Advisor: Prof. Jianghong Rao  
Research: Applying functional nanomaterials for pathogen detection and cancer treatment
  - Using gold nanoparticles enhanced Raman spectroscopy for antibiotic resistant bacteria detection
  - Monitoring immuno-oncology using magnetic nanoparticles and enzyme-specific peptide substrate
- 2) Brown University, Department of Chemistry, 2017-2022. Advisor: Prof. Vicki L. Colvin  
Thesis: Magnetic nanocrystal clusters: understanding, shaping, and exploiting their giant susceptibility
  - Achieved systematic synthesis of magnetic nanoclusters with ultra-high magnetic sensitivity, excellent magnetic separation and heating efficiency
  - Applied the magnetic nanoclusters for drug delivery, cancer treatment, and in-vivo imaging
- 3) Beihang University, School of Chemistry, 2014-2017. Advisor: Prof. Ying Zhu  
Research Project: Carbon nanomaterials derived from biomass for energy conversion devices
- 4) University of New Brunswick, Department of Chemistry, 2016. Advisor: Prof. David I. MaGee  
Research Project: Pest Management Using Green Technology

## PROFESSIONAL SKILLS

- Magnetic resonance imaging (MRI) and magnetic particle imaging (MPI)
- Electron microscopy, including TEM, SEM, FIB, and Cryo-EM. Able to acquire high-resolution image
- Chromatography, including GC, GC-MS and HPLC
- Other analytical tools, including XPS, XRD, NMR, IR, Raman, TGA, VSM

## SELECTED AWARDS

- Outstanding Student Poster Award, ACS Division of Colloid and Surface Chemistry, 2022
- Philip A. Smith '26 Chemistry Fellowship, Brown University, 2018
- Shenyuan Medal, the **Highest Undergraduate Honor** of Beihang University, 2017
- Nano Research Paper of the **Month Award**, Tsinghua University Press, 2016