XIANG SHI

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EDUCATION

Sept. 2020 – Present | **University of Science and Technology of China (USTC)** *Hefei, China*
School of Chemistry and Materials Science

- Major in Physical Chemistry at Lu Jiaxi Talent Program (**B.S. expected**)
  Overall GPA: **3.93** / 4.30 (**90.85** / 100); Major Rank: **2**/28; Rank at Chemical School**: 2**/135
  TOEFL: **109** (R 29; L 29; S 24; W 27); GRE: **330** (V 160; Q 170; AW 3.0)
- **Scholarships:**
  Sept. 2022 | Minglong Huang Scholarship (top 5%), USTC
  Sept. 2022 | Talent Award, Institute of Chemistry, Chinese Academy of Sciences (top 5%)
  Sept. 2021 | National Scholarship 2021 (top 1%), USTC
  Sept. 2021 | Suzhou Yucai Scholarship (top 1%), USTC
- **Research Interests:** Electrochemistry, Photocatalysis, Fuel Cell, Carbon Dioxide Reduction (CO2R), Single Atom Catalysis, Nanomaterial

PAPERS

- Wenjie Wang[+], Tianpei Zhou[+], Kai Zhang[+], Chun Wang, **Xiang Shi**, Lin Wang, et al. (2022). "*Sulfur-induced dynamic reconstruction of iron-nitrogen species for highly active neutral oxygen reduction reactions*". SCIENCE CHINA Chemistry, 2022. https://doi.org/10.1007/s11426-022-1384-1
- Bin Liu[+], Jake Heinlein[+], **Xiang Shi** and Shu Hu. *"CH4 Capture and Utilization"* **(in submission)**
- *"MOF-derived Fe-Ce Single-Atom Pairs Doped Electrocatalyst for Hydrogen-Oxygen Fuel Cells"* **(in submission)**
- *"2D BiTeBr with Low Thermoconductivity Using Electrochemical Intercalation Stripping"* **(in preparation)**

RESEARCH EXPERIENCE

Department of Chemistry, iChEM (Collaborative Innovation Center of Chemistry for Energy Materials)

- **Single Atom Catalyst@Piezocatalyst & Pyrocatalyst**

Sept. 2022 – Present | Undergraduate researcher advised by Prof. Yuen Wu
Work as the major researcher, in charge of the whole project
Modify $BaTiO_3$'s surface structure and morphology, load metal atoms on it and measure their performances

Hefei National Laboratory for Physical Sciences at Microscale & Department of Chemistry

- **Researches into Modified Layered BiTeBr and its Thermoconductivity Behavior**

Jun. 2022 – Present | Undergraduate researcher advised by Prof. Changzheng Wu
In charge of the whole synthesis, figure out the most favorable intercalation and exfoliation conditions and the following modification of single layer BiTeBr to BiTeSe and BiTeO

- **MOF-derived Fe-Ce Single-Atom Pairs Doped Electrocatalyst for Hydrogen-Oxygen Fuel Cells**

Jun. 2021 – Jun. 2022 | Undergraduate researcher advised by Prof. Changzheng Wu
Responsible for the synthesis of Ce-Fe single atom pairs @ZIF, the fuel cell testing part and characterization

- **Planar FeS1N3 Sites with Adjacent Sulfur Anions Realizing Superior Neutral Zinc-air Batteries Performance**

Apr. 2021 – Jun.2021 | Undergraduate researcher advised by Prof. Changzheng Wu
Undertook the synthesis of S-doped-FeN_4, the fuel cell testing and characterization

VISIT AND EXCHANGE PROGRAMS

Jun. 2023 – Present | **Summer Research at Yale University** *New Haven, CT*
Undergraduate researcher advised by Prof. Shu Hu
CO2 photoreduction to CO using photodeposited Ag on GaP in Seawater
CO electroreduction in alkaline solution using deposited Cu on interdigitated array microelectrodes (IDA)
A paper titled "*CH4 Capture and Utilization*" was produced and in submission

Jun. 2022 | **Summer Research at University of Texas, Austin** *Remote*
Undergraduate researcher advised by Professor Guihua Yu
Studied hyrdrogel, Li+ storage, Ni-N-P for Hydrogen Evolution Reaction (HER)

TECHNICAL SKILLS

- Common Characterization: TEM, UV-Vis, Raman, SEM, EDS, XRD, XPS, IR
- Operation of electrochemical testing station and fuel cell system
- Software: Comsol, MATLAB, Origin, Photoshop, Premier, Audition, Latex

EXTRACURRICULAR ACTIVITIES

- *2022* | **Chair** of the Student Union of the School of Chemistry and Materials Science in USTC
- *2023-Present* | **Assistant Leader** of USTC Chorus