Xiaoqi Zheng

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EDUCATION

ShanghaiTech University Expected in June 2019

B.Eng. in Materials Science and Engineering, School of Physical Science and Technology

Major GPA: 3.93/4.00 | Overall GPA: 3.75/4.00 | Rank: 5/49

AWARDS & HONORS

- Dean's Scholarship, 2017–2018 & 2016–2017, top ranking 2–7%
- Outstanding Student of ShanghaiTech University, 2017–2018 & 2016–2017 & 2015–2016
- Study Abroad Scholarship of ShanghaiTech University, 2017

STANDARDIZED TESTS

GRE	Total 326, Quantitative Reasoning 170, Verbal Reasoning 156, Analytical Writing 3.5
TOEFL iBT	Total 106, Listening 30, Speaking 22, Reading 29, Writing 25

RESEARCH PROJECTS

Research on Hybrid Perovskites Using Solid-state NMR 2018/04–present

Bo-Lin Lin Research Group, ShanghaiTech University *Advisor: Prof. Bo-Lin Lin*

- Applied variable-temperature multinuclear solid-state NMR to investigate the crystal structure, phase transition and cation dynamics of a series of layered perovskites
- Employed variable-temperature powder XRD, TGA, DSC to assist the comprehension of phase transition
- Revealed the mobility of ammonium that is a critical factor to charge carrier lifetimes for lead halide perovskites by the innovative second moment (M_2) analysis of the ^{1}H spinning sidebands manifolds
  - *Future work:* To explain the significant difference of the spin-lattice relaxation time (T_1) between three-dimensional and two-dimensional perovskites, and to explore the potential application of M_2 analysis for the examination of molecular mobility which is critical for certain materials' properties

Research on Bioresorbable Electronics & Wearable Gas Sensors, visiting student 2018/07–2018/08

Huanyu Cheng Research Group, The Pennsylvania State University *Advisor: Prof. Huanyu Cheng*

- Sintered zinc nanoparticles for printable bioresorbable electronics by intense pulsed light
- Dynamically assessed the NO_2 gas sensing of reduced graphene oxide (rGO)/MoS_2 and graphene/MoS_2 composites synthesized via different routes
- Evaluated the volatile ethanol sensing performances of metal oxides (e.g., NiO) synthesized by laser printing
- Performed an innovative method to enhance the stretchability of a NO_2 gas sensor which used rGO/MoS_2 and graphene/MoS_2 nanocomposites as sensing materials

Research on New Perovskite Materials 2017/04–2018/07

Bo-Lin Lin Research Group, ShanghaiTech University *Advisor: Prof. Bo-Lin Lin*

- Synthesized and characterized heterovalent-doped two-dimensional perovskite materials for promising photovoltaic devices (Bi^{3+}-doped $(CH_3(CH_2)_3NH_3)_2(CH_3NH_3)_{n-1}Pb_nI_{3n+1}$ (n = 1, 2, 3))
- Expanded the fundamental knowledge of the effect of interfacial-layered and middle-layered Bi^{3+} sites, the positive correlation between the layer number and the doping-level, and the enhanced light-absorbing ability upon Bi^{3+} doping
- Conducted the systematic experiments, novel fluorescence microscope along with DFT calculations to

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explore the layer number and the doping-level effects on photophysical behaviors, environmental and photo-stabilities of the material

Research on Olympic Games by Web Scraping 2017/11–2017/12

Independent research

- Scraped the information of all past Olympic Games using Python (Beautiful Soup)
- Built a K-means clustering to investigate how the national indicators such as GDP, population, GDP growth and life expectancy played roles in the medal-winning battle of the Olympics
- Performed data analysis and visualization about how different factors (e.g., gender and age) affected medal winning of athletes
- Constructed a data report based on Olympic Games

PUBLICATIONS & PAPERS TO BE PUBLISHED

- X Zheng, H Cheng*. Flexible and stretchable metal oxide gas sensors for healthcare. ***SCI. CHINA Tech. Sci.*** (Online First, DOI: 10.1007/s11431-018-9397-5, Feb. 2019)
- F Lyu, X Zheng, Y Wang, R Shi, J Yang, Z Li, J Yu, BL Lin*. Bi^{3+} Doped 2D Ruddlesden-Popper Organolead Iodide Perovskites. (***Angew. Chem. Int. Ed.***, under review)
- X Zheng, F Lyu, H Liu*, BL Lin*. A study of hybrid two-dimensional lead iodide perovskites $(CH_3(CH_2)_3NH_3)_2PbI_4$ using solid-state nuclear magnetic resonance. (Work-in-progress)

SKILLS

- *Scientific Instruments:* Rich-experienced in XRD, UV-Vis-NIR spectrophotometer, FTIR spectrometer, SEM combined with EDX, Intense Pulsed Light (IPL) system, Microplotter (a picoliter fluid dispensing system); familiar with TEM, STEM, XPS, AFM, NMR
- *Scientific Software:* Proficient in Origin, ChemDraw, Jade, Topspin, MestReNova, MS Office
- *Programming Languages:* MATLAB, Wolfram Language, Python
- *English Skill:* Reading and writing academic materials fluently, giving posters and presentations without difficulties
- *Additional Information:* Have been enjoying playing the piano for 16 years

SOCIAL SERVICES & ACTIVITES

Volunteer of *Shanghai International Marathon* 2018/11–2018/11
Exchange Program at *Fu Jen Catholic University* 2017/12–2017/12
Summer Exchange Program at *University of California, Berkeley* 2017/07–2017/08
President of Student Press Corps at *ShanghaiTech University* 2016/09–Present
Leader of Social Survey Program aimed at rural communities in *Yunnan Province* 2016/07–2016/08
Founder of the Flea Market at *ShanghaiTech University* 2015/09–Present

REFERENCES

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