Curriculum Vitae

Basic information

Name: Li Zihao **Date of birth:** 1996.10.20

Nations: China **Marital status:** Unmarried

Family address: Qingdao city **Graduated college:** Ningxia University

Contact number: 18562864070 **Master's Degree:** Shandong University

Wechat: lzh19961020 **Current postion:** Graduated master

Mail box: 201913738@mail.sdu.edu.cn **Future direction**: Doctor (PSL University)

Personal Statement

During my graduate career, my main research projects are centered around power conversion efficiency (PCE) of perovskite solar cells. With my efforts, the PCE has broken through 21% from initial 15%. However, the PCE of devices I fabricated are still far below the world's high-level research groups (25.7%), which indicates that there still has a lot of room to progress, so I made determination to research and produce a world-record solar cell in my doctoral career. As for personal character, cheerful personality and single-minded attitude, sometimes I will indulge in one thing for a day. Hobbies are singing and bodybuilding, as well as doing puzzles, watching movies and playing Chinese chess.

Education Background

Undergraduate stage (bachelor of Materials Chemistry) **Supervisor: Luo Min**

School of Chemistry and Chemical Engineering, **Ningxia University** Sep., 2015-Jun., 2019

- **Major courses**

Material Science and Engineering, Polymer materials, Material Chemistry, Structural Chemistry, Physical Chemistry, analytical Chemistry, inorganic chemistry, Organic Chemistry, college physics, etc.

- **Research direction**

Preparation and electrochemical desalination of Ca-doped $Na_{(0.71-x)}Ca_xCoO_2$ electrode thin films

Postgraduate stage (master of Materials Physics and Chemistry) **Supervisor: Yin Longwei**

School of Materials Science and Engineering, **Shandong University** Sep., 2019-Jun., 2022

- **Major courses**

Modern materials analysis methods, Thermodynamics of materials, Fundamentals of Crystallography, Theory of interface Structure, Mathematical and physical Methods, Numerical Analysis, etc.

- **Main research 1**

Efficient Crystallization Optimization Strategy of Organometallic Dopant for High-performance Planar Hybrid Perovskite Solar Cells

- **Main research 2**

SnO_2 with PH buffer for High-Performance Planar Room Temperature $MAPbI_3$ Solar Cells with Negligible Hysteresis

Relevant research/technical/laboratory Skills

The experimental skills

✧ Capable of perovskite single crystal synthesis, including 2D, 3D and hybrid perovskite

✧ Master various film deposition techniques, including one-step, two-step colloidal spin coating, chemical deposition, and physical evaporation

Preparation of perovskite solar cells

✧ Fabricate normal and inverted devices with more than 21% PCE (0.09cm^2 active areas).

Test instrument

✧ Proficient in XRD, IR, UV absorption spectrum, fluorescence spectrometer, contact Angle tester, ozonator, and thermal evaporation system.

✧ Understand and used atomic layer deposition equipment

Awards and Funding

2016.09-2019.06

- Awarded university-level Merit Student for two consecutive years, university-level first-class Scholarship for three years (GPA/3.71).
- Title of Excellent League Member, Excellent Graduation thesis, Outstanding Graduate of the university
- First Prize of National College Students Metallographic Contest (2018)
- Second and third prize of National College Students English Contest(2016/2017)
- Postgraduate recommendation to Shandong University

2019.09-2022.06

- Freshman Scholarship, Excellent Student Scholarship (2019), university Third Class Scholarship (2020)

Academic Publication

- Bo Li, Bohong Chang, Lu Pan, **Zihao Li**, Lin Fu, Zhubing He, and Longwei Yin* (2020). Tin-based defects and passivation strategies in tin-related perovskite solar cells. ACS Energy Letters, 5(12), 3752-3772.
- Bohong Chang, Bo Li, Lu Pan, Hui Li, Lian Wang, Lin Fu, **Zihao Li**, and Longwei Yin* Polyethylene Glycol Polymer Scaffold Induced Intermolecular Interactions for Crystallization Regulation and Defect Passivation in FASnI3 Films. ACS Appl. Energy Mater. 2021, 4, 4, 3622–3632
- Hui Li, Xiaotao Hao, Bohong Chang, **Zihao Li**, Lian Wang, Lu Pan, Xihan Chen, and Longwei Yin* (2021) Stiffening the Pb-X Framework through a π-Conjugated Small-Molecule Cross-Linker for High-Performance Inorganic CsPbI2Br Perovskite Solar Cells. ACS Appl. Mater. Interfaces 2021, 13, 34, 40489–40501.