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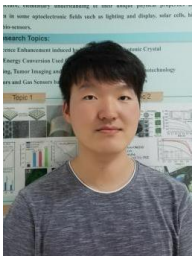

Career Objective

Bearing a strong Academic Research interest and compelling ambition for learning, I seek a challenging career that gives me a chance to improve my technical, intellectual and skills.

Research Areas and Interests

- Solar Cells Device Design and Device Fabrication.
- Synthesis of Perovskite Materials(QDs, Bulk and Single crystal).
- Studying device design based on DFT principle.
- Optimize Perovskite Solar Cells.
- Based on Machine Learning to Study the Stability and Performance of PSCs.

Education

2021.01-2021.12 School of Physics
University Hannover

2019-2020 Research assistant in School of Materials
Heibei University of Technology, School of Materials, Tianjin Provience, China

2016-2019 Master of Physics in Optics
Jilin University, School of Physics, Changchun Provience, China

2012-2016 Bachelor of Physics in Optoelectronic Technology
Changchun University of Science and Technology, School of Optoelectronic Information, Changchun Provience, China

Skills

DFT calculation software(vasp, Materials studio, Guassian CP2K and so on), Python(anaconda, pymatgen, machine learning), and some basic softwares(word, excel and so on), In addition, AFM, SEM, XRD, XPS, SEM-EDX, FIB, TEM, UV, PL, TR-PL, Simulations and so on.

Awards

2020 Chinese Scholarship Council(CSC) from 2021 January 31 to 2025 January 31, China, 48 months

2019 Academic Performance Award, Jilin University, China

Publications List

First author and Corresponding author

1. **Zhang, B.**; Bi, W.; Wu, Y.; Chen, C.; Li, H.; Song, Z.; Dai, Q.; Xu, L.; Song, H., High-Performance CsPbIBr2 Perovskite Solar Cells: Effectively Promoted Crystal Growth by Antisolvent and Organic Ion Strategies. ACS Appl Mater Interfaces 2019, 11 (37), 33868-33878.
2. **Zhang, B.**; Song, Z.; Jin, J.; Bi, W.; Li, H.; Chen, C.; Dai, Q.; Xu, L.; Song, H., Efficient rare earth co-doped TiO2 electron transport layer for high-performance perovskite solar cells. J Colloid Interface Sci 2019, 553, 14-21.
3. Bian, J.; Wu, Y.; Bi, W.; Liu, L.; Su, X.; **Zhang, B.***, Efficient CsPbIBr2 Perovskite Solar Cells: Precise Control of Film Growth through the Application of Organic Iodized Salt and Anti-solvent. Energy & Fuels 2020, 34 (9), 11472-11478.

Other

1. Yang L.; Ma X.; Shang X.; Gao D.; Wang C.; Li M.; Chen C.; **Zhang B,**; Xu S.; Zheng S.; Song H,; Zwitterionic ionic liquid confer defect tolerance, high conductivity and hydrophobicity toward efficient perovskite solar cells exceeding 22% efficiency. Solar RRL 2021.
2. Zhu, L.; Zhang, X.; Li, M.; Shang, X.; Lei, K.; **Zhang, B.**; Chen, C.; Zheng, S.; Song, H.; Chen, J., Trap State Passivation by Rational Ligand Molecule Engineering toward Efficient and Stable Perovskite Solar Cells Exceeding 23% Efficiency. Advanced Energy Materials 2021, 11 (20).
3. Ma, X.; Yang, L.; Shang, X.; Li, M.; Gao, D.; Wu, C.; Zheng, S.; **Zhang, B.**; Chen, J.; Chen, C.; Song, H., Grain boundary defect passivation by in situ formed wide-bandgap lead sulfate for efficient and stable perovskite solar cells. Chemical Engineering Journal 2021, 426.
4. Jin, J.; Li, H.; Bi, W.; Chen, C.; **Zhang, B.**; Xu, L.; Dong, B.; Song, H.; Dai, Q., Efficient and stable perovskite solar cells through e-beam preparation of cerium doped TiO2 electron transport layer, ultraviolet conversion layer CsPbBr3 and the encapsulation layer Al2O3. Solar Energy 2020, 198, 187-193.
5. Jin, J.; Li, H.; Bi, W.; Chen, C.; **Zhang, B.**; Xu, L.; Dong, B.; Song, H.; Dai, Q., Efficient and stable perovskite solar cells through e-beam preparation of cerium doped TiO2 electron transport layer, ultraviolet conversion layer CsPbBr3 and the encapsulation layer Al2O3. Solar Energy 2020, 198, 187-193.
6. Song, Z.; Bi, W.; Zhuang, X.; Wu, Y.; **Zhang, B.**; Chen, X.; Chen, C.; Dai, Q.; Song, H., Low - Temperature Electron Beam Deposition of Zn - SnOx for Stable and Flexible Perovskite Solar Cells. Solar RRL 2019, 4 (2).

7. Bi, W.; Wu, Y.; **Zhang, B.**; Jin, J.; Li, H.; Liu, L.; Xu, L.; Dai, Q.; Chen, C.; Song, H., Enhancing Photostability of Perovskite Solar Cells by Eu(TTA)2(Phen)MAA Interfacial Modification. ACS Appl Mater Interfaces 2019, 11 (12), 11481-11487.
8. Jin, J.; Li, H.; Chen, C.; **Zhang, B.**; Bi, W.; Song, Z.; Xu, L.; Dong, B.; Song, H.; Dai, Q., Improving Efficiency and Light Stability of Perovskite Solar Cells by Incorporating YVO4:Eu3+, Bi3+ Nanophosphor into the Mesoporous TiO2 Layer. ACS Applied Energy Materials 2018, 1 (5), 2096-2102.
9. Chen, C.; Liu, D.; **Zhang, B**.; Bi, W.; Li, H.; Jin, J.; Chen, X.; Xu, L.; Song, H.; Dai, Q., Carrier Interfacial Engineering by Bismuth Modification for Efficient and Thermoresistant Perovskite Solar Cells. Advanced Energy Materials 2018, 8 (20).
10. Li, H.; Chen, C.; Jin, J.; Bi, W.; **Zhang, B.**; Chen, X.; Xu, L.; Liu, D.; Dai, Q.; Song, H., Near-infrared and ultraviolet to visible photon conversion for full spectrum response perovskite solar cells. Nano Energy 2018, 50, 699-709.
11. Jin, J.; Li, H.; Chen, C.; **Zhang, B.**; Xu, L.; Dong, B.; Song, H.; Dai, Q., Enhanced Performance of Perovskite Solar Cells with Zinc Chloride Additives. ACS Applied Materials & Interfaces 2017.

Reference

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