杨双

所属学院 材料科学与工程学院

学科领域 材料科学与工程

邮箱 syang@ecust.edu.cn

个人简介

2020/01 至今　　华东理工大学，教授 / 博导

2018/10 - 2020/01　　山东大学，教授 / 博导

2017/07 - 2018/06　　美国内布拉斯加大学林肯分校，博士后

2016/07 - 2017/06　　新加坡南洋理工大学，博士后

2011/09 - 2016/07　　华东理工大学，工学博士

2007/09 - 2011/06　　青岛科技大学，工学学士

研究方向

主要从事光电转化功能材料及器件的研究。

研究方向包括：

1. 光电半导体晶态材料的生长工艺与结晶机制；
2. 光伏电池技术：钙钛矿太阳能电池、量子点敏化太阳电池等；
3. 光电信息技术：光电信号探测 / 存储 / 发射器件。

研究成果及主要发表文章

1. Jingjing He, Junxian Liu, Yu Hou*, Yun Wang*, Shuang Yang*, Hua Gui Yang, Surface chelation of cesium halide perovskite by dithiocarbamate for efficient and stable solar cells, Nature Communications, 2020, 11, 4237. (新闻杂志《Nanowerk》亮点报道 “Chelation - a new bonding mode for stable perovskite surface”)

2. Ze Qing Lin, Hong Wei Qiao, Zi Ren Zhou, Yu Hou, Xiaolong Li, Hua Gui Yang*, Shuang Yang*, Water assisted growth of oriented, large grain-sized CsPbI2Br perovskite films with solar cell efficiency exceeding 16%, Journal of Materials Chemistry A, 2020, 8, 17670-17674.

2. Shuang Yang#, Shangshang Chen#, Edoardo Mosconi, Yanjun Fang, Xun Xiao, Congcong Wang, Yu Zhou, Zhenhua Yu, Jingjing Zhao, Yongli Gao, Filippo De Angelis, Jinsong Huang*, Stabilizing halide perovskite surfaces for solar cell operation with wide–bandgap lead oxysalts, Science, 2019, 6452 (365), 473-478.(ESI 高被引论文、ESI 热点论文、新闻杂志《Physics Word》亮点评述 “Can surface treatments enable commercial perovskite solar cells?”)

3. Shuang Yang, Jun Dai, Zhenhua Yu, Yuchuan Shao, Yu Zhou, Xun Xiao, Xiao Cheng Zeng, and Jinsong Huang*, Tailoring passivation molecular structures for extremely small open-circuit voltage loss in perovskite solar cells, Journal of the American Chemical Society, 2019, 141 (14), 5781–5787.(ESI 高被引论文、ESI 热点论文)

4. Shuang Yang#, Zeyuan Xu#, Sha Xue, Praneeth Kandlakunta, Lei Cao* and Jinsong Huang*, Organohalide lead perovskites: more stable than glass under gamma-ray radiation, Advanced Materials, 2019, 31, 1805547.

5. Hong Wei Qiao#, Shuang Yang#, Yun Wang#, Xiao Chen, Tian Yu Wen, Li Juan Tang, Qilin Cheng, Yu Hou*, Huijun Zhao*, Hua Gui Yang*， A gradient heterostructure based on tolerance factor in high-performance perovskite solar cells with 0.84 fill factor, Advanced Materials, 2019, 1, 1804217.(ESI 高被引论文)

6. Shuang Yang, Wenxin Niu, An-Liang Wang, Zhanxi Fan, Bo Chen, Chaoliang Tan, Qipeng Lu and Hua Zhang*, Ultrathin organic-inorganic perovskite nanosheets with bright, tunable photoluminescence and high stability, Angewandte Chemie International Edition, 2017, 56 (15), 4252-4255. (ESI 高引论文，VIP 文章，新闻杂志《Advance Science News》亮点报道 “Solvent is the key to making perovskite nanosheets”)

7. Shuang Yang#, Yun Wang#, Porun Liu, Yi Bing Cheng, Hui Jun Zhao*, Hua Gui Yang*, Functionalization of perovskite thin films with moisture-tolerant molecules, Nature Energy, 2016, 1, 15016. (封面文章，ESI 热点文章，ESI 高引用论文，化学新闻杂志《Chemistry Word》亮点评述 “Dip coating to solve perovskite moisture sensitivity”)

8. Shuang Yang#, Bing Xing Yang#, Long Wu#, Yu Hang Li, Porun Liu, Huijun Zhao, Yan Yan Yu, Xue Qing Gong*, Hua Gui Yang*, Titania single crystals with a curved surface, Nature Communications, 2014, 5, 5355.

10. Shuang Yang, Yi Chu Zheng, Yu Hou, Xiao Chen, Ying Chen, Yun Wang, Huijun Zhao and Hua Gui Yang*, Formation mechanism of freestanding CH3NH3PbI3 functional crystals: in situ transformation vs dissolution-crystallization, Chemistry of Materials, 2014, 26 (23), 6705-6710.