

## Kyle Frohna

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### Publications

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#### PUBLICATIONS

- **Multifunctional sulfonium-based treatment for perovskite solar cells with less than 1% efficiency loss over 4,500-h operational stability tests.** *Nature energy*  
Suo, J., Yang, B., Mosconi, E., Bogachuk, D., Doherty, T. A., Frohna, K., Kubicki, D. J., Fu, F., Kim, Y., Er-Raji, O., Zhang, T., Baldinelli, L., Wagner, et al  
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- **Nanoscale chemical heterogeneity dominates the optoelectronic response of alloyed perovskite solar cells** *NATURE NANOTECHNOLOGY*  
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2022; 17 (2): 190-196
- **Hybrid perovskites for device applications** *HANDBOOK OF ORGANIC MATERIALS FOR ELECTRONIC AND PHOTONIC DEVICES, 2ND EDITION*  
Frohna, K., Stranks, S. D., Ostroverkhova, O.  
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- **Multifunctional sulfonium-based treatment for perovskite solar cells with less than 1% efficiency loss over 4,500-h operational stability tests** *NATURE ENERGY*  
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- **Integration of Metal Meshes as Transparent Conducting Electrodes into Perovskite Solar Cells** *ADVANCED MATERIALS INTERFACES*  
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- **Self-supervised deep learning for tracking degradation of perovskite light-emitting diodes with multispectral imaging** *NATURE MACHINE INTELLIGENCE*  
Ji, K., Lin, W., Sun, Y., Cui, L., Shamsi, J., Chiang, Y., Chen, J., Tennyson, E. M., Dai, L., Li, Q., Frohna, K., Anaya, M., Greenham, et al  
2023
- **Imaging Light-Induced Migration of Dislocations in Halide Perovskites with 3d Nanoscale Strain Mapping** *ADVANCED MATERIALS*  
Orr, K. P., Diao, J., Lintangpradipto, M., Batey, D. J., Iqbal, A. N., Kahmann, S., Frohna, K., Dubajic, M., Zelewski, S. J., Dearle, A. E., Selby, T. A., Li, P., Doherty, et al  
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- **Methylammonium-free co-evaporated perovskite absorbers with high radiation and UV tolerance: an option for in-space manufacturing of space-PV?** *RSC ADVANCES*  
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- **The Electronic Disorder Landscape of Mixed Halide Perovskites** *ACS ENERGY LETTERS*  
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2022; 12 (10)
- **Overcoming Nanoscale Inhomogeneities in Thin-Film Perovskites via Exceptional Post-annealing Grain Growth for Enhanced Photodetection** *NANO LETTERS*  
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- **Stabilized tilted-octahedra halide perovskites inhibit local formation of performance-limiting phases** *SCIENCE*  
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- **Manipulating Color Emission in 2D Hybrid Perovskites by Fine Tuning Halide Segregation: A Transparent Green Emitter** *ADVANCED MATERIALS*  
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- **Proton-Radiation Tolerant All-Perovskite Multijunction Solar Cells** *ADVANCED ENERGY MATERIALS*  
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- **Unraveling the antisolvent dripping delay effect on the Stranski-Krastanov growth of CH<sub>3</sub>NH<sub>3</sub>PbBr<sub>3</sub> thin films: a facile route for preparing a textured morphology with improved optoelectronic properties** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*  
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- **Impact of Mesoporous Silicon Template Pore Dimension and Surface Chemistry on Methylammonium Lead Trihalide Perovskite Photophysics** *ADVANCED MATERIALS INTERFACES*  
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