

BIN CHEN

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EDUCATION

Arizona State University , Tempe, AZ Ph.D. Materials Science and Engineering	2014 – 2018
Fuzhou University , China B.Eng. Materials Science and Engineering	2010 – 2014

RESEARCH EXPERIENCE

Northwestern University , Evanston, IL Director of Research, Paula M. Trienens Institute for Sustainability and Energy	2025 – present
Northwestern University , Evanston, IL Associate Director, TEAMUP Consortium Research: Tandems for Efficient and Advanced Modules using Ultrastable Perovskites	2024 – 2025
Northwestern University , Evanston, IL Research Associate Professor, Department of Chemistry; Department of Electrical & Computer Engineering Research: Emerging semiconductors for solar and sensing applications	2022 – present
University of Toronto , Canada Postdoctoral Fellow, Department of Electrical & Computer Engineering Advisor: Prof. Ted Sargent Research: Perovskite-based tandem solar cells and quantum dot infrared photodetectors	2018 – 2022
Arizona State University , Tempe, AZ Graduate Research Associate, School for Engineering of Matter, Transport & Energy Advisor: Prof. Sefaattin Tongay Dissertation: Atomic Scale Characterizations of Two-dimensional Anisotropic Materials and Their Heterostructures Committee Members: Prof. Sefaattin Tongay, Prof. Mariana Bertoni, Prof. Shery Chang	2014 – 2018

RESEARCH INTERESTS

Our research group is dedicated to designing innovative energy materials and investigating nano-scale processes within these materials and devices. By integrating principles from physics, chemistry, and materials science, we employ advanced microscopy and spectroscopy techniques for detailed characterization. Our goal is to advance energy technologies and contribute to a sustainable future through cutting-edge research and interdisciplinary collaboration.

SELECTED PUBLICATIONS

† equal contribution, * corresponding

22. Zeiske, S.; Ban, H. W.; Li, X.; Deng, B.; López-Arteaga, R.; Kazianga, U. H.; Han, M. G.; Kim, T.-G.; **Chen, B.***; Sargent, E. H.* Revealing Additional Size-Dependent Defect Suppression Channels Governing Detectivity in InAs Colloidal Quantum Dot Photodiodes. *Nano Lett.* **2025**, No. acs.nanolett.5c04477. <https://doi.org/10.1021/acs.nanolett.5c04477>.

21. Huang, C.; Yang, Y.; Liu, C.; Chen, H.; Chaudhuri, S.; Jeon, W. C.; Li, M.; Rolston, N.; Bati, A. S. R.; Gilley, I. W.; Kumral, B.; Serles, P.; Filleter, T.; Schatz, G. C.; Kanatzidis, M. G.; **Chen, B.***; Chen, L. X.*; Sargent, E. H.* Electrostatically Enhanced Buried Interface Binding of Self-Assembled Monolayers for Efficient and Stable Inverted Perovskite Solar Cells. *Adv. Mater.* **2025**, e08740.
20. Bati, A. S. R.; Liu, C.; Gilley, I. W.; Musgrave, C. B., III; Maxwell, A.; Steele, J. A.; Yang, Y.; Chen, H.; Wan, H.; Xu, J.; Solano, E.; Zhang, R.; Huang, C.; Rehl, B.; Lempeis, N.; Carnevali, V.; Vezzosi, A.; Zeng, L.; Grater, L.; Li, M.; Rolston, N.; Choi, D.; Sláma, V.; Rothlisberger, U.; Wang, L.; Goddard, W. A., III; Kanatzidis, M. G.; **Chen, B.***; Bakr, O. M.*; Sargent, E. H.* A Chemically Bonded Monolayer Interface Enables Enhanced Thermal Stability and Efficiency in Pb-Sn Perovskite Solar Cells. *Joule* **2025**, 9 (9), 102047.
19. Choi, D.; Shin, D.; Li, C.; Liu, Y.; Bati, A. S. R.; Kachman, D. E.; Yang, Y.; Li, J.; Lee, Y. J.; Li, M.; Penukula, S.; Kim, D. B.; Shin, H.; Chen, C.-H.; Park, S. M.; Liu, C.; Maxwell, A.; Wan, H.; Rolston, N.; Sargent, E. H.*; **Chen, B.*** Carboxyl-Functionalized Perovskite Enables ALD Growth of a Compact and Uniform Ion Migration Barrier. *Joule* **2025**, 9 (3), 101801.
18. Yang, Y.; Chen, H.; Liu, C.; Xu, J.; Huang, C.; Malliakas, C. D.; Wan, H.; Bati, A. S. R.; Wang, Z.; Reynolds, R. P.; Gilley, I. W.; Kitade, S.; Wiggins, T. E.; Zeiske, S.; Suragtkhuu, S.; Batmunkh, M.; Chen, L. X.; **Chen, B.***; Kanatzidis, M. G.*; Sargent, E. H.* Amidination of Ligands for Chemical and Field-Effect Passivation Stabilizes Perovskite Solar Cells. *Science* **2024**, 386 (6724), 898–902.
17. Li, C.†; Chen, L.†; Jiang, F.†; Song, Z.†; Wang, X.; Balvanz, A.; Ugur, E.; Liu, Y.; Liu, C.; Maxwell, A.; Chen, H.; Liu, Y.; Wang, Z.; Xia, P.; Li, Y.; Fu, S.; Sun, N.; Grice, C. R.; Wu, X.; Fink, Z.; Hu, Q.; Zeng, L.; Jung, E.; Wang, J.; Park, S. M.; Luo, D.; Chen, C.; Shen, J.; Han, Y.; Perini, C. A. R.; Correa-Baena, J.-P.; Lu, Z.-H.; Russell, T. P.; De Wolf, S.; Kanatzidis, M. G.; Ginger, D. S.; **Chen, B.***; Yan, Y.*; Sargent, E. H.* Diamine Chelates for Increased Stability in Mixed Sn–Pb and All-Perovskite Tandem Solar Cells. *Nat. Energy* **2024**, 1–9.
16. Chen, H.†; Liu, C.†; Xu, J.†; Maxwell, A.†; Zhou, W.†; Yang, Y.; Zhou, Q.; Bati, A. S. R.; Wan, H.; Wang, Z.; Zeng, L.; Wang, J.; Serles, P.; Liu, Y.; Teale, S.; Liu, Y.; Saidaminov, M.; Hoogland, S.; Filleter, T.; Kanatzidis, M. G.; **Chen, B.***; Ning Z*; Sargent, E. H.* Improved charge extraction in inverted perovskite solar cells with dual-site-binding ligands. *Science* **2024**, 384 (6692), 189–193.
15. Xu, J.; Maxwell, A.; Song, Z.; Bati, A. S. R.; Chen, H.; Li, C.; Park, S. M.; Yan, Y.; **Chen, B.***; Sargent, E. H.* The Dynamic Adsorption Affinity of Ligands Is a Surrogate for the Passivation of Surface Defects. *Nat. Commun.* **2024**, 15 (1), 2035.
14. Maxwell, A.†; Chen, H.†; Grater, L.; Li, C.; Teale, S.; Wang, J.; Zeng, L.; Wang, Z.; Park, S. M.; Vafaie, M.; Sidhik, S.; Metcalf, I. W.; Liu, Y.; Mohite, A. D.; **Chen, B.***; Sargent, E. H.* All-Perovskite Tandems Enabled by Surface Anchoring of Long-Chain Amphiphilic Ligands. *ACS Energy Lett.* **2024**, 520–527.
13. Yang, Y.†; Liu, C.†; Ding, Y.†; Ding, B.†; Xu, J.†; Liu, A.; Yu, J.; Grater, L.; Zhu, H.; Hadke, S. S.; Sangwan, V. K.; Bati, A. S. R.; Hu, X.; Li, J.; Park, S. M.; Hersam, M. C.; **Chen, B.***; Nazeeruddin, M. K.*; Kanatzidis, M. G.*; Sargent, E. H.* A Thermotropic Liquid Crystal Enables Efficient and Stable Perovskite Solar Modules. *Nat. Energy* **2024**, 1–8.
12. Liu, C.†; Yang, Y.†; Chen, H.†; Xu, J.†; Liu, A.†; Bati, A. S. R.; Zhu, H.; Grater, L.; Hadke, S. S.; Huang, C.; Sangwan, V. K.; Cai, T.; Shin, D.; Chen, L. X.; Hersam, M. C.; Mirkin, C. A.; **Chen, B.***; Kanatzidis, M. G.*; Sargent, E. H.* Bimolecularly-passivated interface enables efficient and stable inverted perovskite solar cells, *Science* **2023**, 382 (6672), 810–815.
11. Liu, Y.†; Zhu, T.†; Grater, L.†; Chen, H.†; Reis, R.; Maxwell, A.; Cheng, M.; Dong, Y.; Teale,

- S.; Leontowich, A. F. G.; Kim, C.; Chan, P. T.; Wang, M.; Paritmongkol, W.; Gao, Y.; Park, S.; Xu, J.; Khan, J. I.; Laquai, F.; Walker, G. C.; Dravid, V. P.; **Chen, B.***; Sargent, E. H.* A Three-Dimensional Quantum Dot Network Stabilizes Perovskite Solids via Hydrostatic Strain. *Matter* 2024, 7 (1), 107–122.
10. Chen, H.†; Maxwell, A.†; Li, C.†; Teale, S.†; **Chen, B.†**; Zhu, T.; Ugur, E.; Harrison, G.; Grater, L.; Wang, J.; Wang, Z.; Zeng, L.; Park, S. M.; Chen, L.; Serles, P.; Awni, R. A.; Subedi, B.; Zheng, X.; Xiao, C.; Podraza, N. J.; Filleter, T.; Liu, C.; Yang, Y.; Luther, J. M.; De Wolf, S.; Kanatzidis, M. G.; Yan, Y.; Sargent, E. H. Regulating Surface Potential Maximizes Voltage in All-Perovskite Tandems. *Nature* 2023, 613 (7945), 676–681.
 9. Chen, H.†; Teale, S.†; **Chen, B.†**; Hou, Y.†; Grater, L.; Zhu, T.; Bertens, K.; Park, S. M.; Atapattu, H. R.; Gao, Y.; Wei, M.; Johnston, A. K.; Zhou, Q.; Xu, K.; Yu, D.; Han, C.; Cui, T.; Jung, E. H.; Zhou, C.; Zhou, W.; Proppe, A. H.; Hoogland, S.; Laquai, F.; Filleter, T.; Graham, K. R.; Ning, Z.; Sargent, E. H. Quantum-Size-Tuned Heterostructures Enable Efficient and Stable Inverted Perovskite Solar Cells. *Nat. Photonics* 2022, 16 (5), 352–358.
 8. **Chen, B.**; Sargent, E. H. What Does Net Zero by 2050 Mean to the Solar Energy Materials Researcher? *Matter* 2022, 5 (5), 1322–1325.
 7. **Chen, B.**; Chen, H.; Hou, Y.; Xu, J.; Teale, S.; Bertens, K.; Chen, H.; Proppe, A.; Zhou, Q.; Yu, D.; Xu, K.; Vafaie, M.; Liu, Y.; Dong, Y.; Jung, E. H.; Zheng, C.; Zhu, T.; Ning, Z.; Sargent, E. H. Passivation of the Buried Interface via Preferential Crystallization of 2D Perovskite on Metal Oxide Transport Layers. *Adv. Mater.* 2021, e2103394.
 6. Fang, Z.†; Wang, L.†; Mu, X.†; **Chen, B.†**; Xiong, Q.; Wang, W. D.; Ding, J.; Gao, P.; Wu, Y.; Cao, J. Grain Boundary Engineering with Self-Assembled Porphyrin Supramolecules for Highly Efficient Large-Area Perovskite Photovoltaics. *J. Am. Chem. Soc.* 2021.
 5. Jung, E. H.†; **Chen, B.†**; Bertens, K.; Vafaie, M.; Teale, S.; Proppe, A.; Hou, Y.; Zhu, T.; Zheng, C.; Sargent, E. H. Bifunctional Surface Engineering on SnO₂ Reduces Energy Loss in Perovskite Solar Cells. *ACS Energy Lett.* 2020, 5 (9), 2796–2801.
 4. **Chen, B.**; Baek, S.-W.; Hou, Y.; Aydin, E.; De Bastiani, M.; Scheffel, B.; Proppe, A.; Huang, Z.; Wei, M.; Wang, Y.-K.; Jung, E.-H.; Allen, T. G.; Van Kerschaver, E.; García de Arquer, F. P.; Saidaminov, M. I.; Hoogland, S.; De Wolf, S.; Sargent, E. H. Enhanced Optical Path and Electron Diffusion Length Enable High-Efficiency Perovskite Tandems. *Nat. Commun.* 2020, 11 (1), 1257.
 3. Manekkathodi, A.†; **Chen, B.†**; Kim, J.; Baek, S.-W.; Scheffel, B.; Hou, Y.; Ouellette, O.; Saidaminov, M. I.; Voznyy, O.; Madhavan, V. E. Solution-Processed Perovskite-Colloidal Quantum Dot Tandem Solar Cells for Photon Collection beyond 1000 Nm. *Journal of Materials Chemistry A* 2019, 7 (45), 26020–26028.
 2. **Chen, B.**; Wu, K.; Suslu, A.; Yang, S.; Cai, H.; Yano, A.; Soignard, E.; Aoki, T.; March, K.; Shen, Y. Controlling Structural Anisotropy of Anisotropic 2D Layers in Pseudo-1D/2D Material Heterojunctions. *Adv. Mater.* 2017, 29 (34), 1701201.
 1. **Chen, B.**; Sahin, H.; Suslu, A.; Ding, L.; Bertoni, M. I.; Peeters, F.; Tongay, S. Environmental Changes in MoTe₂ Excitonic Dynamics by Defects-Activated Molecular Interaction. *ACS nano* 2015, 9 (5), 5326–5332.

FUNDING SUPPORT

Pending Research

3. DE-FOA-0003337

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy
\$1,500,000

06/2025 – 05/2028

Efficient and stable near-infrared organic photovoltaics for hybrid organic tandem solar cells

Role: Co-Principal Investigator

2. DOI-BAA-SOLSTICE-FY25-01

IARPA

\$2,00,000

6/2026 – 12/2027

Superior Options for Long-life Solar Technologies with Impressive Conversion Efficiencies (SOLSTICE)

Role: Co-Principal Investigator

1. NSF 23-612

U.S. National Science Foundation

\$600,000

05/2025 – 04/2028

Synthesis and surface chemistry of InAs colloidal quantum dots toward efficient short-wave infrared detection

Role: Co-Principal Investigator

Current and Completed Research

8. Translation and Incubation Fund

Trienens Institute for Sustainability and Energy

\$100,000

01/2024 – 12/2024

Stable perovskite solar cells with cost-effective bilayer metal oxides as electron transport layers

Role: Principal Investigator

7. DE-FOA-0003058

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy

\$6,700,000

09/2024 – 08/2026

STACKED: Stability and Characterization of Hole-Transporting Layers Key to Enabling Outdoor Durability

Role: Co-Principal Investigator

6. Seed Funding Initiative

Center for Engineering Sustainability and Resilience

\$80,000

02/2024 – 8/2025

Introducing AC Photo-Hall Method: Separating Electron/Hole Mobilities in Perovskite Photovoltaics

Role: Co-Principal Investigator

5. OSR-5624

King Abdullah University of Science and Technology

\$350,000

02/2024 – 01/2026

All-Perovskite Tandem Solar Cells

Role: Co-Principal Investigator

4. DE-EE0010502

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy

\$9,000,000

09/2023 – 08/2026

TEAMUP: Tandems for Efficient and Advanced Modules using Ultrastable Perovskites
Role: Senior Personnel

3. HR001122S0044-SNAP-FP-009
U.S. Department of Defense, Defense Advanced Research Projects Agency
\$10,000,000
08/2023 – 07/2027
SYNCED: Interfacing Synthetic Biology with Electrochemical Detectors for Smart Non-Invasive Assays of Physiology
Role: Senior Personnel
2. N00014-20-1-2572
U.S. Department of the Navy, Office of Naval Research
\$480,000
08/2020 – 07/2023
Wide-bandgap perovskites for efficient, stable tandems
Role: Senior Personnel
1. OSR-2020-CRG9-4350.2
King Abdullah University of Science and Technology, Office of Sponsored Research
\$600,000
04/2021 – 03/2024
SOLSTICE: Solar-driven Circular Carbon Enabled by Perovskite/Perovskite/Si Triple-Junction Tandems
Role: Senior Personnel

PATENTS

2. US and Canadian Patent: A Surface Treatment Method to Passivate Inverted Structure Perovskite Solar Cells
1. US Provisional Patent: Perovskite Solar Cells With Dual Site Binding Ligands

CONFERENCES AND PRESENTATIONS

28. Organizer for ACS Spring symposium, March 2026
27. Invited talk at nanoGe - MATSUSFall25, October 2025
26. Invited talk at Lawrence Symposium on Epitaxy, October 2025
25. Invited talk at The University of Toledo, October, 2025
24. Organizer for MRS Spring symposium, April 2025
23. Invited talk at MRS Spring meeting, April 2025
22. Invited talk at Ludwig Maximilian University of Munich, Mar 2025
21. Invited talk at Nanyang Technical University, Mar 2025
20. Invited talk at National University of Singapore, Feb 2025
19. Oral presentation at MRS fall meeting, Dec 2024
18. Oral presentation at ACS fall meeting, Aug 2024
17. Invited talk at 4th tandemPV Workshop, June 2024
16. Oral presentation at MRS fall meeting, November 2023
15. Session chair for MRS fall meeting, November 2023

14. Invited talk at Physics Seminar Series UC Merced, October 2023
13. Invited talk at 2nd Northwestern/Muenster Symposium on Smart Materials, August 2023
12. Organizer for ACS Fall meeting symposium: Organic, Perovskite and Hybrid Solar (raised \$5000 sponsorship for the symposium), August 2023
11. Oral presentation at PVSC 50th, June 2023
10. Invited talk at Homeland Defense & Security Information Analysis Center, April 2023
9. Invited talk at APS March meeting, March 2023
8. Invited talk at EcoMat Webinar: Perovskite Materials for Photovoltaic and Optoelectronic Applications, January 2023
7. Invited talk at Lawrence Symposium on Epitaxy, Arizona State University, January 2023
6. Invited talk at Zhejiang University, June 2022
5. Invited talk at KAUST Research Conference: 2022 Accelerating Solar Energy Research towards meeting Vision 2030 Goals, May 2022
4. Invited talk at ICFO – UofT – Stanford International School on the Frontiers of Light, October 2021
3. Invited talk at MRS Spring Meeting, April 2021
2. Poster presentation at MRS Spring Meeting, March 2017
1. Poster presentation at MRS Spring Meeting, March 2016

TEACHING AND MENTORING

Instructor at Kellogg and the Querrey InQbation Lab 2024

I teach the one-quarter Independent Study course, the Kellogg – Q Lab Entrepreneurial Residency. This course allows MBA students to be embedded in Northwestern research centers, providing structured entry points into cutting-edge technology areas and offering exposure to cross-disciplinary research.

Instructor for Independent Study (399) at Weinberg College of Arts and Sciences 2024

I teach the on-quarter Independent Study course on optoelectronics, where I am responsible for developing the syllabus and providing guidance to the enrolled undergraduate students. This course offers students opportunities to build fundamental knowledge and explore research trends in the literature.

Perovskite Photovoltaic Research Group Leader 2019 – 2022

I manage a team of over 15 members focusing on perovskite photovoltaics research. My responsibilities include mentoring on specific research projects, conceptualizing manuscripts, writing grant proposals, and preparing grant reports.

Lecturer (simulated) 2019

At the Teaching in Higher Education course at the University of Toronto, I developed my syllabus on “Two-dimensional semiconductor materials and systems” and taught in simulated classes.

ACADEMIC AND SOCIAL SERVICE

Journal advisory board 2025 – present
EES Solar

Journal reviewer 2016 – present
Science, Nature, Nature Energy, Nature Photonics, Nature Sustainability, Chemical Reviews, Journal of the American Chemical Society, Joule, Angewandte Chemie; Nature Communications, Advanced Materials, Matter, Energy & Environmental Science, Advanced Energy Materials, ACS Energy Letters,

ACS Nano, ACS Photonics, Advanced Science, Chemical Science, EES Solar, ACS Applied Materials & Interfaces, ACS Applied Energy Materials; The Journal of Physical Chemistry, The Journal of Physical Chemistry Letters, Journal of Applied Physics, Progress in photovoltaics, Journal of Photovoltaics, Journal of Physics D: Applied Physics, Journal of Physics: Condensed Matter, 2D Materials, Nanotechnology, Nano Energy

Proposal reviewer

2023 – present

U.S. National Science Foundation

Natural Sciences and Engineering Research Council of Canada

ACS Petroleum Research Fund

National Research Foundation of Singapore

HONORS AND AWARDS

4. Stanford/Elsevier's list of top 2% scientists worldwide
3. Highly Cited Researcher in the field of Cross-Field - 2023 (Clarivate)
2. Highly Cited Researcher in the field of Cross-Field - 2024 (Clarivate)
1. Highly Cited Researcher in the field of Cross-Field - 2025 (Clarivate)

ALL PUBLICATIONS

135. Zeiske, S.; Ban, H. W.; Li, X.; Deng, B.; López-Arteaga, R.; Kazianga, U. H.; Han, M. G.; Kim, T.-G.; **Chen, B.***; Sargent, E. H.* Revealing Additional Size-Dependent Defect Suppression Channels Governing Detectivity in InAs Colloidal Quantum Dot Photodiodes. *Nano Lett.* **2025**, No. acs.nanolett.5c04477. <https://doi.org/10.1021/acs.nanolett.5c04477>.
134. Huang, C.; Yang, Y.; Liu, C.; Chen, H.; Chaudhuri, S.; Jeon, W. C.; Li, M.; Rolston, N.; Bati, A. S. R.; Gilley, I. W.; Kumral, B.; Serles, P.; Filleter, T.; Schatz, G. C.; Kanatzidis, M. G.; **Chen, B.***; Chen, L. X.*; Sargent, E. H.* Electrostatically Enhanced Buried Interface Binding of Self-Assembled Monolayers for Efficient and Stable Inverted Perovskite Solar Cells. *Adv. Mater.* **2025**, e08740.
133. Bati, A. S. R.; Liu, C.; Gilley, I. W.; Musgrave, C. B., III; Maxwell, A.; Steele, J. A.; Yang, Y.; Chen, H.; Wan, H.; Xu, J.; Solano, E.; Zhang, R.; Huang, C.; Rehl, B.; Lempeis, N.; Carnevali, V.; Vezzosi, A.; Zeng, L.; Grater, L.; Li, M.; Rolston, N.; Choi, D.; Sláma, V.; Rothlisberger, U.; Wang, L.; Goddard, W. A., III; Kanatzidis, M. G.; **Chen, B.***; Bakr, O. M.*; Sargent, E. H.* A Chemically Bonded Monolayer Interface Enables Enhanced Thermal Stability and Efficiency in Pb-Sn Perovskite Solar Cells. *Joule* **2025**, *9* (9), 102047.
132. Choi, D.; Shin, D.; Li, C.; Liu, Y.; Bati, A. S. R.; Kachman, D. E.; Yang, Y.; Li, J.; Lee, Y. J.; Li, M.; Penukula, S.; Kim, D. B.; Shin, H.; Chen, C.-H.; Park, S. M.; Liu, C.; Maxwell, A.; Wan, H.; Rolston, N.; Sargent, E. H.*; **Chen, B.*** Carboxyl-Functionalized Perovskite Enables ALD Growth of a Compact and Uniform Ion Migration Barrier. *Joule* **2025**, *0* (101801), 101801.
131. Gilley, I. W.; Kwon, H. W.; Liu, C.; Yang, Y.; Huang, C.; Wan, H.; Bati, A. S. R.; Oriel, E. H.; Kepenekian, M.; Vishal, B.; Zeiske, S.; Bayikadi, K. S.; Wiggins, T. E.; Vasileiadou, E. S.; **Chen, B.**; Schaller, R. D.; Even, J.; De Wolf, S.; Sargent, E. H.; Kanatzidis, M. G. Combining Organic Cations of Different Sizes Grants Improved Control over Perovskitoid Dimensionality and Bandgap. *J. Am. Chem. Soc.* **2025**, *147* (9), 7777–7787.
130. Aryal, S.; Puthirath, A. B.; Jones, B.; Bati, A. S. R.; **Chen, B.**; Mather, T.; Ajayan, P. M.; Sargent, E. H.; Kaul, A. B. Solution-Processed Tungsten Diselenide as an Inorganic Hole Transport Material for Moisture-Stable Perovskite Solar Cells in the n-i-p Architecture. *Sol. Energy Mater. Sol. Cells* **2025**, *282* (113313), 113313.

129. Wiggins, T. E.; Bati, A. S. R.; Kepenekian, M.; Reynolds, R. P.; Zeiske, S.; Pournara, A. D.; Liu, C.; Yang, Y.; Zhang, X.; Gilley, I. W.; **Chen, B.**; Even, J.; Sargent, E. H.; Kanatzidis, M. G. Pb:Sn Ratio-Driven Polytypism and Band Modulation in Photoresponsive Hexagonal Perovskitoids. *J. Am. Chem. Soc.* **2025**, *147* (24), 21014–21031.
128. Chen, J.-K.; Zhou, Y.; Zhang, B.-B.; Kikkawa, J.; Yin, J.; Shirahata, N.; **Chen, B.**; Sargent, E. H.; Sun, H.-T. Computationally Guided Defect-Suppressing Synthesis of Luminescent Tin Halide Perovskite Nanocrystals. *Nat. Synth.* **2025**, 1–11.
127. Liu, C.; Yang, Y.; Fletcher, J. D.; Liu, A.; Gilley, I. W.; Musgrave, C. B., III; Wang, Z.; Zhu, H.; Chen, H.; Reynolds, R. P.; Ding, B.; Ding, Y.; Zhang, X.; Skackauskaite, R.; Wan, H.; Zeng, L.; Bati, A. S. R.; Shibayama, N.; Getautis, V.; **Chen, B.**; Rakstys, K.; Dyson, P. J.; Kanatzidis, M. G.; Sargent, E. H.; Nazeeruddin, M. K. Cation Interdiffusion Control for 2D/3D Heterostructure Formation and Stabilization in Inorganic Perovskite Solar Modules. *Nat. Energy* **2025**, *10* (8), 981–990.
126. Yang, Y.; Chen, H.; Liu, C.; Xu, J.; Huang, C.; Malliakas, C. D.; Wan, H.; Bati, A. S. R.; Wang, Z.; Reynolds, R. P.; Gilley, I. W.; Kitade, S.; Wiggins, T. E.; Zeiske, S.; Suragtkhuu, S.; Batmunkh, M.; Chen, L. X.; **Chen, B.***; Kanatzidis, M. G.*; Sargent, E. H.* Amidination of Ligands for Chemical and Field-Effect Passivation Stabilizes Perovskite Solar Cells. *Science* **2024**, *386* (6724), 898–902.
125. Shen, Y.; Li, C.; Liu, C.; Reitz, S. A.; **Chen, B.**; Sargent, E. H. The Impact of Interface and Heterostructure on the Stability of Perovskite-Based Solar Cells. *Appl. Phys. Rev.* **2024**, *11* (4), 041306.
124. Zhu, T.; Grater, L.; Teale, S.; Vasileiadou, E. S.; Sharir-Smith, J.; **Chen, B.**; Kanatzidis, M. G.; Sargent, E. H. Coupling Photogeneration with Thermodynamic Modeling of Light-Induced Alloy Segregation Enables the Identification of Stabilizing Dopants. *Chem. Mater.* 2024.
123. Liu, C.; Yang, Y.; Chen, H.; Spanopoulos, I.; Bati, A. S. R.; Gilley, I. W.; Chen, J.; Maxwell, A.; Vishal, B.; Reynolds, R. P.; Wiggins, T. E.; Wang, Z.; Huang, C.; Fletcher, J.; Liu, Y.; Chen, L. X.; De Wolf, S.; **Chen, B.**; Zheng, D.; Marks, T. J.; Facchetti, A.; Sargent, E. H.; Kanatzidis, M. G. Two-Dimensional Perovskitoids Enhance Stability in Perovskite Solar Cells. *Nature* 2024, 1–3.
122. Li, S.; Jiang, Y.; Xu, J.; Wang, D.; Ding, Z.; Zhu, T.; **Chen, B.**; Yang, Y.; Wei, M.; Guo, R.; Hou, Y.; Chen, Y.; Sun, C.; Wei, K.; Qaid, S. M. H.; Lu, H.; Tan, H.; Di, D.; Chen, J.; Grätzel, M.; Sargent, E. H.; Yuan, M. High-Efficiency and Thermally Stable FACsPbI₃ Perovskite Photovoltaics. *Nature* **2024**, *635* (8037), 82–88.
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