

DEZHANG (MIKE) CHEN

dchenba@connect.ust.hk / +86 13310880889 / [Google Scholar](#) / [ORCID](#)

EDUCATION

The Hong Kong University of Science and Technology (HKUST) *Sep.2019 – Aug.2023*
Ph.D. in Chemistry

University of California, Irvine *Sep.2015 – Jun.2018*
B.S. in Chemistry

RESEARCH EXPERIENCE

Istituto Italiano di Tecnologia (Liberato Manna's group) *Nov.2025 – Present*
Marie Skłodowska-Curie Actions Postdoctoral Fellow

- Development of perovskite nanoplatelet assemblies for polarized light emissions

HKUST (Jonathan Halpert's group) *Sep.2019 – Nov.2025*
Postdoctoral Research Fellow (2024-2025)

- Surface engineering of perovskite nanowires and nanoplatelets
- Chiral ligand manipulation of perovskite and metal chalcogenide quantum dots

Ph.D. Candidate (2019-2023)

- Perovskite quantum dot LEDs (red, green and blue)
- Inverted lead-free chalcogenide nanocrystal solar cell
- Carrier dynamics in singlet fission solar cell

Brown University (Ou Chen's group) *Apr.2025 – Aug.2025*
Visiting Postdoctoral Scholar

- High-Entropy Alloyed Perovskite Nanoplatelets
- Core-shell Engineering of AgBiS₂ Nanocrystal

Yale University (Mengxia Liu's group) *Apr.2023 – Aug.2023*
Visiting Assistant in Research

- Sterically Controlled Growth of Perovskite Nanoplatelets
- Chiral Ligand Exchange of Metal Chalcogenide Nanocrystals

University of California, Irvine (Shane Ardo's group) *Jan.2017 – Jan.2018*
Undergraduate Researcher

- Hybrid 2D Bismuth-based Perovskite Solar Cell

FIRST-AUTHOR PUBLICATIONS

(# denotes equal contribution, * denotes corresponding author)

1. P Ding[#], D Chen[#], M Tamtaji[#], S Hu, M Qammar, PK Ko, AA Sergeev, B Zou, B Tang, KS Wong, L Guo*, G Chen*, AL Rogach*, JE Halpert*; "Intense Circular Dichroism and Spin Selectivity in AgBiS₂ Nanocrystals by Chiral Ligand Exchange" **Advanced Materials** 2024, 2410087

2. B Zou[#], D Chen^{*,}, M Qammar[#], P Ding, PK Ko, W Wu, SB Shivarudraiah, H Yan, JE Halpert* “In-situ Surface Metal Passivation on AgBiS₂ Nanocrystals for Trap-Reduced Inverted Solar Cells” **ACS Applied Energy Materials** 2024, 7, 19, 8271-8277
3. D Chen, T Wang, PK Ko, J Shi, M Liu^{*}, JE Halpert*; “Sterically Controlled Synthesis of Amine-Free CsPbBr₃ Nanoplatelet for Stable, Pure-Blue Light Emission” **Angewandte Chemie** 2024, e202317590.
4. D Chen, PK Ko, CHA Li, B Zou, P Geng, L Guo, JE Halpert*; “Amino Acid-Passivated Pure Red CsPbI₃ Quantum Dot LEDs” **ACS Energy Letters** 2023, 8, 1, 410–416
5. P Geng[#], D Chen[#], SB Shivarudraiah, X Chen, L Guo^{*}, JE Halpert*; “Carrier Dynamics of Efficient Triplet Harvesting in AgBiS₂/Pentacene Singlet Fission Solar Cells” **Advanced Science** 2023, 2300177
6. D Chen, SB Shivarudraiah, P Geng, M Ng, CHA Li, N Tewari, X Zou, KS Wong, L Guo, JE Halpert*; “Solution-Processed, Inverted AgBiS₂ Nanocrystal Solar Cells” **ACS Applied Materials & Interfaces** 2022, 14, 1, 1634–1642

OTHER PUBLICATIONS

1. PK Ko[#], J Ge[#], P Ding, D Chen, HLT Tsang, N Kumar, JE Halpert*; “The Deepest Blue: Major Advances and Challenges in Deep Blue Emitting quasi-2D and Nanocrystalline Perovskite Light-emitting Diode” **Advanced Materials** 2024, Accepted
2. P Ding, D Chen, PK Ko, M Qammar, P Geng, L Guo^{*}, JE Halpert*; “Nanomaterials for spin-based quantum information” **Nanoscale** 2025, 17, 1148-1170
3. B Zou[#], A Liang[#], P Ding[#], J Yao, X Zeng, H Li, R Ma, C Li, W Wu, D Chen, M Qammar, H Yu, J Yi, L Guo, SH Pun, JE Halpert, G Li, Z Kan, H Yan; “Dipole Moment Modulation of Terminal Groups Enables Asymmetric Acceptors Featuring Medium Bandgap for Efficient and Stable Ternary Organic Solar Cells” **Angewandte Chemie** 2024, e202415332
4. B Zou[#], HM Ng[#], H Yu^{*,}, P Ding[#], J Yao, D Chen, SH Pun, H Hu, K Ding, R Ma, M Qammar, W Liu, W Wu, JYL Lai, C Zhao, M Pan, L Guo, JE Halpert, H Ade, G Li, H Yan; “Precisely Controlling Polymer Acceptors with Weak Intramolecular Charge Transfer Effect and Superior Coplanarity for Efficient Indoor All-Polymer Solar Cells with over 27% Efficiency” **Advanced Materials** 2024, 2405404.
5. PK Ko, D Chen, CHA Li, CCS Chan, A Sergeev, P Ding, D Lam, B Ouyang, L Guo, KS Wong, JE Halpert*; “Color Tuning in Cesium Lead Halide Nanocrystals via A-Site Substitution as an Alternative Method for Achieving Spectrally Stable Blue Perovskite Nanocrystal Light-Emitting Diodes” **Chemistry of Material** 2024, 36, 8, 3735–3744
6. P Ding[#], PK Ko[#], P Geng[#], D Chen, Z Xing, HLT Tsang, KS Wong, L Guo, JE Halpert*; “Strongly Confined and Spectrally Tunable CsPbBr₃ Quantum Dots for Deep Blue QD-LEDs” **Advanced Optical Materials** 2024, 12, 2302477
7. SB Shivarudraiah[#], CCS Chan[#], D Chen, Z Zhou, M Ng, N Tewari, CK Tao, KS Wong^{*}, JE Halpert*; “In Situ MAPbI₃ Perovskite Nanostructures Formed by a Poly[(phenylglycidyl ether)-co-formaldehyde] Epoxide for Enhanced Stability and Photoluminescence” **ACS Applied Nano Materials** 2023, 6, 13, 12240-12247
8. CHA Li[#], PK Ko[#], CCS Chan, A Sergeev, D Chen, N Tewari, KS Wong, JE Halpert*; “Mixed Ruddlesden–Popper and Dion–Jacobson Phase Perovskites for Stable and Efficient Blue Perovskite LEDs” **Advanced Functional Materials** 2023, 2303301
9. K Mallem, MF Prodanov, D Chen, M Marus, C Kang, SB Shivarudraiah, VV Vashchenko, JE

- Halpert, AK Srivastava*; “Solution-Processed Red, Green, and Blue Quantum Rod Light-Emitting Diodes” **ACS Applied Materials & Interfaces** 2022, 14, 16, 18723–18735
10. Y Li[#], Z Zhou[#], N Tewari, M Ng, P Geng, D Chen, PK Ko, M Qammar, L Guo, JE Halpert*; “Progress in copper metal halides for optoelectronic applications” **Material Chemistry Frontiers** 2021, 5, 4796-4820

CONFERENCES

GRC Colloidal Semiconductor Nanocrystals Les Diablerets, Switzerland. [Poster]	2024
Material Research Society Spring San Francisco, CA, US. [Poster]	2023
International Workshop on Advanced Display Materials Online. [Poster]	2021
UCI Undergraduate Research Symposium Irvine, CA, US. [Talk]	2018

AWARDS

- Marie Skłodowska-Curie Actions Postdoctoral Fellowships (2025)
- HK Research Talent Hub - Innovation and Technology Fund (2024)
- HKUST Research Travel Grant (2023, 2024)
- HKUST Postgraduate Fellowship (2019 – 2023)
- UCI Summer Undergraduate Research Program (2017)
- UCI Dean’s honor list (4 semesters, September 2016 – April 2017)

GRANT PARTICIPATION

- “*Chiral Nanoplatelets Assemblies for Optoelectronic and Spintronic Devices (CHINOS)*” Horizon Europe MSCA Postdoctoral Fellowships 2024
- “*Cesium Copper Halide Perovskite Nanocrystals for AC-Driven White Lights and RGB Transparent Displays*” Research Grant Council - General Research Fund (2021 – 2024)
- “*Photo-aligned Perovskite Nanorods for Polarized Down-conversion Emission Films Achieved by Optically Induced In-situ Oriented Growth and Ink-printed Halide Pixilation*” Innovation and Technology Fund (No. ITS/059/22MX) (2023 – 2025)

SUPERVISION

- Mentoring for 5 postgraduates (PhD or MPhil) in Fall 2020, Fall 2021, Spring 2022, Fall 2022 for synthesis of perovskite nanocrystal, synthesis of metal chalcogenide nanocrystal, solar cell device fabrication and lab basics
- Mentoring for 3 undergraduates for undergraduate research program for synthesis and device fabrication
- Teaching assistant for courses in HKUST: General Chemistry I / General Chemistry II / Analytical Chemistry / Physical Chemistry I / Materials Characterization Method / Laboratory for General Chemistry II / Analytical Chemistry Laboratory / Capstone Research I / Capstone Research II

REVIEW

Reviewer for Angewandte Chemie, Advanced Optical Materials