



Exponent®

Engineering & Scientific Consulting

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Professional Profile

Dr. Cham Heng Angus Li's area of technical expertise focuses on synthesis, fabrication and characterization of nanomaterials to be used in light-emitting diode (LED) devices. He researched both the active material (halide perovskites in 2D thin-films and 0D nanocrystals) and the transport layers.

During his PhD study, Dr. Li mainly worked on improving blue perovskite LEDs' efficiency and stability with composition and device engineering.

Dr. Li is experienced with various optical and electrical characterizations such as UV-Vis absorption spectroscopy, photoluminescence measurements, ellipsometry, X-ray crystallography, x-ray photoelectron spectroscopy, scanning electron microscopy with energy disperse X-ray spectroscopy (EDS), and atomic force microscopy. He also collaborated with physicists in HKUST to perform ultrafast spectroscopies, including transient absorption and time-resolved photoluminescence (TRPL). He is also familiar with LED characterizations with current-voltage (JV) measurements and spectrometer coupled with integrated sphere or photo-detectors.

Prior joining Exponent, Dr. Li worked as research assistant in department of chemistry in City University of Hong Kong, where he synthesized organic small molecules to be used in organic solar cells. Dr. Li also worked briefly in a local marketing and public relationship company to assist branding building for companies from Asia and Europe.

Academic Credentials & Professional Honors

Ph.D., Chemistry, Hong Kong University of Science and Technology (HKUST), 2022

M.Sc., Material Science and Nanotechnology, City University of Hong Kong, 2018

B.Sc., Chemistry, Hong Kong University of Science and Technology (HKUST), 2017

Prior Experience

Research Assistant, Department of Chemistry, City University of Hong Kong, 2017-2018

Operation Assistant, CloverLink Production Limited, 2016-2017

Professional Affiliations

Society for Information Display (SID), Hong Kong

American Chemical Society

Publications

C.H.A. Li, P. Geng, S.B. Shivarudraiah, M. Ng, X. Zhang, B. Xu, L. Guo, J.E. Halpert. "The Multiple Roles of Metal Ion Dopants in Spectrally Stable, Efficient Quasi-2D Perovskite Sky-Blue Light-emitting Devices" *Adv. Optical Mater.*, 2021, 2100860

C.H.A. Li, Z. Zhou, P. Vashishtha, J.E. Halpert. "The future is blue (LEDs): why chemistry is the key to perovskite displays". *Chem. Mater.*, 2019, 31, 6003-6032.

D. Chen, P.K. Ko, C.H.A. Li, B. Zou, P. Geng, L. Guo, J.E. Halpert "Amino Acid-Passivated Pure Red CsPbI₃ Quantum Dot LEDs". *ACS Energy Lett.*, 2023, 8, 410-416

N. Tewari, D. Lam, C.H.A. Li, J.E. Halpert. "Recent advancements in batteries and photo-batteries using metal halide perovskites". *APL Materials*, 2022, 10, 040905

D. Chen, S.B. Shivarudraiah, P. Geng, M. Ng, C.H.A. Li, N. Tewari, X. Zou, K.S. Wong, L. Guo, J.E. Halpert, "Solution-Processed, Inverted AgBiS₂ Nanocrystal Solar Cells". *Appl. Mater. Interfaces*, 2022, 14, 1634 – 1642

S.B. Shivarudraiah, N. Tewari, M. Ng, C.H.A. Li, J.E. Halpert. "Semi-transparent Formamidinium Lead Bromide Solar Cell with variable Average Visible Transmittancy". *ACS Appl. Mater. Interfaces*, 2021, 13, 37223-37230

P. Vashishtha, S. Bishnoi, C.H.A. Li, M. Jagadeeswararao, T.J.N. Hooper, N. Lohia, S.B. Shivarudraiah, M.S. Ansari, S.N. Sharma, J.E. Halpert. "Recent Advancements in Near-Infrared Perovskite Light-Emitting Diodes". *ACS Appl. Electron. Mater.* 2020, 2, 3470–3490

S.B. Shivarudraiah, M. Ng, C.H.A. Li, J.E. Halpert. "All-Inorganic, Solution-Processed, Inverted CsPbI₃ Quantum Dot Solar Cells with a PCE of 13.1% Achieved via a Layer-by-Layer FAI Treatment". *ACS Appl. Energy Mater.* 2020, 3, 5620–5627