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Academic Qualification

Ph.D. in Applied Chemistry, Shanghai Jiaotong University

Teaching Area

Materials Science and Engineering
Chemistry

Research Area

Synthesis of Semiconductor Quantum Dots
Optoelectronic Devices
Bio-application of fluorescent nanomaterials
Environmental functional nanomaterials

Working Experience

2006-2012, Postdoctoral Researcher, CEA, France/Los Alamos National Lab/UCSB
2013- 2022, Professor, School of Environmental Science and Engineering, Shanghai Jiaotong University, China
2022-present, Professor, Macao Institute of Materials Science and Engineering, Macau University of Science and Technology, Macau

Academic Publication (selected)

Mengda He, Qinggang Zhang, Francesco Carulli,..., Sergio Brovelli, Liang Li*, Ultra-stable, solution-processable CsPbBr₃-SiO₂ nanospheres for highly efficient color conversion in μ -LEDs, ACS Energy Lett. 2023, 8, 151–158
Matteo L. Zaffalon, Francesca Cova, Mingming Liu, ...,Liang Li *, Anna Vedda*, Sergio Brovelli* Extreme γ -ray radiation hardness and high scintillation yield in perovskite nanocrystals, Nature Photonics, 2022, 16, 860–868.
Qinggang Zhang,...,Long Kong*,Liang Li* Stable Lead-Free Tin Halide Perovskite with Operational Stability>1200h by Suppressing Tin(II) Oxidation, Angewandte Chemie-International Edition, 2022, 61, e2022054.
Qinggang. Zhang,...,Liang Li*, Suppressing thermal quenching of lead halide perovskite nanocrystals by constructing a wide-bandgap surface layer for achieving thermally stable white light-emitting diodes, Chemical Science 2022, 13 3719-3727.
Congyang Zhang, Qun Wan, Luis K Ono, Yuqiang Liu, Weilin Zheng, Qinggang Zhang, Mingming Liu, Long Kong, Liang Li*, Yabing Qi*, "Narrow-Band Violet-Light-Emitting Diodes Based on Stable Cesium Lead Chloride Perovskite Nanocrystals" ACS Energy Lett. 2021,6,3545-355.
Mingming Liu, Qun Wan, Huamiao Wang, ...,Sergio Brovelli*, Liang Li*, Suppression of temperature quenching in perovskite nanocrystals for efficient and thermally stable light-emitting diodes, Nature Photonics, 2021, 15, 379–385.

Congyang Zhang, Wanbin Li, Liang Li*, Metal Halide Perovskite Nanocrystals in Metal-Organic Framework Host: Not Merely Enhanced Stability, 2021, Angewandte Chemie-International Edition, 2021, 60,7488–7501.

Qinggong Zhang, Bo Wang, Weilin Zheng, Long Kong, Qun Wan, Congyang Zhang, Zhichun Li, Xueyan Cao, Mingming Liu, Liang Li*, Ceramic-like stable CsPbBr₃ nanocrystals encapsulated in silica derived from molecular sieve templates, Nature Communications, 2020, 11, 1-9.

Lu Huang, Zhichun Li, Congyang Zhang, Long Kong, Bo Wang, Shouqiang Huang, Vaishali Sharma, Houyu Ma, Qingchen Yuan, Yue Liu, Guoqing Shen, Kaifeng Wu, Liang Li*, Sacrificial oxidation of a self-metal source for the rapid growth of metal oxides on quantum dots towards improving photostability, Chemical Science, 2019, 10, 6683-6688.

Congyang Zhang, Bo Wang, Weilin Zheng, Shouqiang Huang, Long Kong, Zhichun Li, Gufeng He, Liang Li*, Hydrofluoroethers as orthogonal solvents for all-solution processed perovskite quantum-dot light-emitting diodes, Nano Energy, 2018, 51, 358-365.

Congyang Zhang, Bo Wang, Wanbin Li, Shouqiang Huang, Long Kong, Zhichun Li · Liang Li*, Conversion of invisible metal-organic frameworks to luminescent perovskite nanocrystals for confidential information encryption and decryption, Nature Communications, 2017, 8, 1138.

Zhichun Li, Long Kong, Shouqiang Huang, Liang Li*, Highly Luminescent and Ultrastable CsPbBr₃ Perovskite Quantum Dots Incorporated into a Silica/Alumina Monolith, Angewandte Chemie-International Edition, 2017, 129, 8246 –8250.

Shouqiang Huang, Zhichun Li, Long Kong, Nanwen Zhu, Aidang Shan, Liang Li*, Enhancing the Stability of CH₃NH₃PbBr₃ Quantum Dots by Embedding in Silica Spheres Derived from Tetramethyl Orthosilicate in “Waterless” Toluene, Journal of the American Chemical Society, 2016, 138, 5749–5752.

Zhichun Li, Wei Yao, Long Kong, Yixin Zhao, Liang Li*, General Method for the Synthesis of Ultrastable Core/Shell Quantum Dots by Aluminum Doping, Journal of the American Chemical Society, 2015, 137, 12430-12433.

A. Pandey, S. Brovelli, R. Viswanatha, Liang Li, J.M.Pietryga, V.I. Klimov*, S.A.Crooker*. Long-lived photo induced magnetization in copper doped ZnSe–CdSe core–shell nanocrystals, Nature Nanotechnology, 2012, 7, 792-797.

Liang Li, Anshu Pandey, Donald J. Werder, Bishnu P. Khanal, Jeffrey M. Pietryga, Victor I. Klimov*, Efficient Synthesis of Highly Luminescent Copper Indium Sulfide-Based Core/Shell Nanocrystals with Surprisingly Long-Lived Emission, Journal of the American Chemical Society, 2011, 133, 1176-1179.

Qun Wan, Weilin Zheng, Chen Zou, Francesco Carulli, Congyang Zhang, Haili Song, Mingming Liu, Qinggang Zhang, Lih Y. Lin, Long Kong, Liang Li, and Sergio Brovelli, Ultrathin Light-Emitting Diodes with External Efficiency over 26% Based on Resurfaced Perovskite Nanocrystals, ACS Energy Letters 2023 8, 927-934

Patents (selected)

Liang Li; Zhichun Li; Metal oxide/silicon dioxide-coated quantum dot and method for preparing same,

2018-9-27, United States, US 20180273839 A1. Issued Patent

Liang Li; Zhichun Li; Self-passivating quantum dot and preparation method thereof, 2017-8-31, United

States, US 20170247614 A1. Issued Patent

Li Liang, Zhang Qinggang. Preparation method of semiconductor nanocrystalline fluorescent material and

semiconductor nanocrystalline fluorescent material prepared by the method and its application [P]. China,

ZL 2019 1 1055146.5. Issued Patent

Li Liang, Kong Long, Liu Min. CuS nanocrystalline adsorbent and its preparation method and its

application in copper electroplating wastewater treatment [P]. China, ZL201510915507.4, 2020-06-19.

Issued Patent

Li Liang, Li Zhichun, Huang Shouqiang. Metal oxide/silica coated or wrapped quantum dots and their

preparation method [P]. China, ZL201610478181.8, 2020-04-10. Issued Patent

Li Liang, Kong Long, Liu Min. ZnFe₂S₄ nanocrystalline adsorbent and its preparation method and its application in electroplating wastewater treatment [P]. China, ZL201510915533.7, 2020-06-19. Issued

Patent

Li Liang, Li Zhichun. A self-passivating quantum dot and its preparation method [P]. China,

ZL201510830152.9, 2019-07-12. Issued Patent

Qu Zan, Yan Naiqiang, Li Liang, Fang Li, Chen Dongyao. A method for simultaneous removal and separation of multiple heavy metals in wastewater [P]. China, ZL201610783337.3, 2019-12-10. Issued

Patent

Yan Lili, Li Liang, Shen Guoqing, Sun Mingxing, Qin Jiaolong. A quantum dot photocatalytic flexible film

and its preparation method and application [P]. China, ZL201610194204.2, 2019-09-03.

Issued Patent

Li Liang, Kong Long, Qu Zan. Vulcanizing agent modified magnetic nano Fe₃O₄ adsorbent and its

preparation method and application [P]. China, ZL201410145654.3, 2016-10-19. Issued

Patent

Li Liang, Yan Lili. Magnetic biochar quantum dot composite adsorbent and its preparation and use method

[P]. China, ZL201410145147.X, 2016-08-24. Issued Patent

Li Liang, Yan Naiqiang, Qu Zan. A waste liquid mercury removal adsorbent and its preparation method and

use method [P]. China, ZL201310632485.1, 2016-02-10. Issued Patent

Professional Certification and Awards

Nomination award of China TOP 10 research progress in optics of 2021

Best Editor award of Nanoresearch (Journal), 2021

Best Paper award of SESE Shanghai Jiaotong University, 2021

The most favorated teacher of SESE Shanghai Jiaotong University, 2020

Excellent Award for the industrialization of scientific technology, SJTU, 2018

Best Paper award of SESE Shanghai Jiaotong University, 2018

The First Prize of Natural Science Award by the Ministry of Education, China, 2016

Best Paper award of SESE Shanghai Jiaotong University, 2015

Feixiang program for young talents, Science and technology Commission of Shanghai, 2014

Program for New Century Excellent Talents, China, 2013

Professional Society Membership

Member , Chinese Society of Particuoloy