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Born in 12/Aug/1993, From China, Male

EDUCATION

Since Jul. 2022	Professor in Optical Engineering Wuhan National Laboratory for Optoelectronics (WNLO) Huazhong University of Science and Technology (HUST)
Jul. 2020~ Jul. 2022	Postdoc. in Biomedical Engineering Wuhan National Laboratory for Optoelectronics (WNLO) Huazhong University of Science and Technology (HUST)
Sep. 2015~Jun. 2020	Ph.D. in Optical Engineering Wuhan National Laboratory for Optoelectronics (WNLO) Huazhong University of Science and Technology (HUST)
Sep. 2011~Jun. 2015	B.E. in Optoelectronic Materials and Devices College of Chemistry Huazhong University of Science and Technology (HUST)

RESEARCH INTERESTS

1. Vapour deposited perovskite light-emitting diodes (PeLEDs) and Micro-display

- (1) The representative paper entitled “Efficient all-thermally evaporated perovskite light-emitting diodes for active matrix displays.” (*Nat. Photon.* **2023**, *17*, 435) was awarded the 2023 Huazhong University of Science and Technology Major Academic Advances;
- (2) The review article is invited by the chief editor of *Nat. Rev. Mater.* (Dr. Charlotte Allard) on evaporated perovskite LED progress;
- (3) Collaborated with Huaxing Optoelectronics to develop cesium-lead bromine microdisplay chips, with pixel size up to 8 μm by 6 μm and resolution of 3034 pixels per inch.

2. Highly luminescent lead-free perovskites and spin materials and devices

- (1) The representative paper entitled “Efficient and stable emission of warm-white light from lead-free halide double perovskites.” (*Nature* **2018**, *563*, 541.) with 1373 citations was awarded the 2018 China Top 100 High International Impact Papers as well as Top 10 Advances in Chinese Optics in 2019;
- (2) Special magnetic exciton polarizers utilizing self-limited domain exciton luminescence for spin

electroluminescent devices.

3. Different application and key technologies based on Mini-/Micro-LEDs

- (1) Currently we work with companies to develop color conversion technology and optical optimization for Mini-/Micro-LEDs.
- (2) Metasurface-based near-eye displays and reflective displays.

PUBLICATIONS

First-author and corresponding author papers:

- [1] **J. Luo**,⁺ X. Wang,⁺ S. Li,⁺ J. Liu,⁺ Y. Yan,^{*} J. Tang,^{*} *et al.*, “Efficient and stable emission of warm-white light from lead-free halide double perovskites” *Nature* 2018, 563, 541. (IF=64.800) **Hot Paper** and **Highly Cited Paper**
- [2] J. Li, ⁺ P. Du,⁺ Q. Guo,⁺ **J. Luo**,^{*} J. Tang,^{*} *et al.*, “Efficient all-thermally evaporated perovskite light-emitting diodes for active matrix displays” *Nat. Photon.* 2023, 17, 435. (IF= 39.728) **Cover Article**
- [3] W. Pan,⁺ H. Wu,⁺ **J. Luo**,⁺ Z. Deng, ⁺ Q. Xie,^{*} J. Tang,^{*} *et al.*, “Cs₂AgBiBr₆ single-crystal X-ray detectors with a low detection limit” *Nat. Photon.* 2017, 11, 726. (IF= 39.728) **Hot Paper** and **Highly Cited Paper**
- [4] **J. Luo**, L. Yang, Z. Tan, J. Tang,^{*} *et al.*, “Efficient blue light emitting diodes based on europium halide perovskites” *Adv. Mater.* 2021, 2101903. (IF=29.400)
- [5] P. Du,⁺ J. Li, ⁺ L. Wang,⁺ **J. Luo**,^{*} J. Tang,^{*} *et al.*, “Efficient and large-area all vacuum-deposited perovskite light-emitting diodes via spatial confinement” *Nat. Common.* 2021, 14, 4751. (IF=16.600)
- [6] Q. Guo,⁺ L. Wang, ⁺ L. Yang,⁺ **J. Luo**,^{*} J. Tang,^{*} *et al.*, “Spectra stable deep-blue lightemitting diodes based on cryolite-like cerium(III) halides with nanosecond d-f emission” *Sci. Adv.* 2022, 8, eabq2148. (IF=13.600)
- [7] **J. Luo**,⁺ S. Li,⁺ J. Tang,^{*} *et al.*, “Cs₂AgInCl₆ Double Perovskite Single Crystals: Parity Forbidden Transitions and Their Application For Sensitive and Fast UV Photodetectors” *ACS Photon.* 2018, 5, 398. (IF=7.529) **Hot Paper** and **Highly Cited Paper**
- [8] L. Wang,⁺ Q. Guo, ⁺ J. Duan, ⁺ **J. Luo**,^{*} J. Tang,^{*} *et al.*, “Exploration of nontoxic Cs₃CeBr₆ for violet light-emitting diodes” *ACS Energy Lett.* 2021, 6, 4245. (IF=23.101)
- [9] Q. Guo,⁺ X. Zhao,⁺ **J. Luo**,^{*} J. Tang,^{*} *et al.*, “Light Emission of Self-Trapped Excitons in Inorganic Metal Halides for Optoelectronic pplications” *Adv. Mater.* 2022, 34, 2201008. (IF=29.400)
- [10] S. Huang,⁺ Z. Shen,⁺ **J. Luo**,^{*} J. Du,^{*} *et al.*, “Water-resistant Subwavelength Perovskite Lasing from Transparent Silica-Based Nanocavity” *Adv. Mater.* 2023, 2306102. (IF=29.400)
- [11] J. Zhu, J. Li,^{*} B. Song,^{*} **J. Luo**,^{*} *et al.*, “All-Thermally Evaporated Blue Perovskite Light-Emitting Diodes for Active Matrix Displays” *Small Methods* 2023, 2300712. (IF=12.400)
- [12] J. Li, **J. Luo**,^{*} J. Tang,^{*} *et al.*, “All-vacuum fabrication of yellow perovskite light-emitting diodes” *Sci. Bull.* 2022, 67, 178. (IF=18.900)
- [13] **J. Luo**, G. Niu,^{*} J. Tang,^{*} *et al.*, “Lead-free halide perovskites and perovskite variants as phosphors toward light-emitting applications” *ACS Appl. Mater. & Inter.* 2019, 7, 9665. (IF=9.500)
- [14] X. Zhao, H. Wu,^{*} Z. Xiao,^{*} **J. Luo**,^{*} *et al.*, “Solution-Processed Hybrid Europium (II) Iodide Scintillator for Sensitive X-Ray Detection” *Research* 2023, 6, 1025. (IF=11.000)
- [15] S. Li⁺ **J. Luo**,⁺ J. Tang,^{*} *et al.* “Self-trapped excitons in all-inorganic halide perovskites: fundamentals, status, and potential applications” *J. Phys. Chem. Lett.* 2019, 10, 1999 (IF=6.475) **Hot Paper** and **Highly**

Cited Paper

- [16] J. Li, **J. Luo**,* J. Tang,* *et al.*, “All-vacuum fabrication of yellow perovskite light-emitting diodes” *Sci. Bull.* 2022, 67, 178. (IF=11.780)
- [17] L. Wang, J. Li,* **J. Luo**,* *et al.*, “Effect of post-annealing on thermally evaporated reduced-dimensional perovskite LEDs” *Appl. Phys. Lett.* 2022, 120(8): 081107. (IF= 3.791)
- [18] P. Du, **J. Luo**,* Y. Ma,* *et al.*, “Thermal Evaporation for Halide Perovskite Optoelectronics: Fundamentals, Progress, and Outlook” *Adv. Opt. Mater.* 2021, 2101770. (IF=9.926)

HONOR AND AWARD

- [1] 2023 Significant Academic Progress at Huazhong University of Science and Technology (HUST)
- [2] 2022 Outstanding Doctoral Dissertation, Optical Society of China
- [3] 2019 Optical Society of China Top 10 Advances in Optics of the Year, Ranked No. 1
- [4] 2019 Optical Society of China "Wang Daheng Optics Award"
- [5] 2019 Top 100 High International Impact Papers in China
- [6] 2019 Major Academic Progress, Huazhong University of Science and Technology
- [7] 2017 Top 10 Advances of the Year in Optics, Optical Society of China, Ranked 3rd

PATENT

- [1] U.S. PCT Patent: J. Tang,S. Li, G. Niu, J. Luo, J. Liu U.S. Patent No.: PO20180048US/11046589
- [2] Jiang Tang, J. J. Luo, G. D. Niu, Shunran Li, Jing Liu, Cheng Zhang; A single-component electroluminescent white light device and its preparation method; Patent No.: ZL 2018 1 0388893. X
- [3] Tang Jiang, Jiajun Luo, Weicheng Pan, Haodi Wu, Fansha Cai; A calcite single crystal of its preparation method; Patent No. ZL 2016 1 1066423. 9
- [4] Tang Jiang, Zhou Ying, Luo Jiajun, Song Huaibing; A one-dimensional inorganic polymer and its general preparation method; Patent No. ZL 2016 1 0315617. 1

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所以以下信息由所填写的申请表文字信息整理而成

推荐信息：

Recommended by Enguo Chen, Fuzhou Univerisity, Professor, ceg@fzu.edu.cn

1、Aiming at pixelation and integration, he developed the high efficiency thermal evaporated perovskite light-emitting diodes, and successfully demonstrated the first perovskite active-matrix displays by TFT integration, which can realize static and dynamic playback with $1,080 \times 2,400$ resolution. His work is a landmark achievement in this evolving field.

2、After joining Huazhong University of Science and Technology, he has always been committed to the development of high-performance, miniaturized and integrated display technologies for AR, VR and other advanced displays. He continues to contribute to the development of new display technologies. It's expected that his continued research will lead to better advances in the display field.