

Curriculum Vitae

リュウ ケ
劉 珂
LIU Ke



Postdoctoral Fellow (Hasegawa Group)
Institute of Chemical Reaction Design and Discovery (ICReDD)
Hokkaido University, Sapporo 001-0021 Japan
Email: liu@icredd.hokudai.ac.jp

Research Career

11/2025-present **Postdoctoral Fellow**, Institute for Chemical Reaction Design and Discovery (ICReDD), Hokkaido University, Japan
Supervisor: Prof. Yasuchika Hasegawa
• *Synthesis, structural and photophysical chemistry of lanthanide complexes.*

Education

07/2020-07/2025 **Ph.D. in Materials Science and Engineering**, Center for High Pressure Science and Technology Advanced Research (HPSTAR), Beijing, China
Supervisor: Prof. Yonggang Wang
• *Structural, optical, and electrical behaviors of transition metal compounds under extreme conditions.*

09/2016-06/2020 **B.E. in Materials Physics**, Minored in English, School of Materials Science and Engineering, Hebei University of Technology, Tianjin, China
Supervisor: Prof. Janguang Tao
• *Effect of surface modification of nanomaterials on its supercapacitor characteristics.*

Selected Publications

- [1] **K. Liu**, C. Li, D. Jiang, Y. Ma, T. Wen,* B. Yue, Y. Wang, Piezochromism and Anomalous Near-Infrared Luminescence Evolution of BaCuSi₄O₁₀ and BaCuSi₂O₆ via Pressure-Induced Phase Transition. *J. Mater. Chem. C* **2023**, 11, 15833-15840. (Cover paper, JMCC Hot paper)
- [2] **K. Liu**, T. Wen,* C. Li, Y. Ma, D. Jiang, B. Yue, Y. Wang,* Regulating the Photoluminescence and Energy Transfer Process of Sr₅(PO₄)₃Cl: Eu²⁺, Mn²⁺ via Pressure-Induced Phase Transition. *J. Mater. Chem. C* **2023**, 11, 2162-2168.

- [3] **K. Liu**, C. Li, T. Wen, D. Jiang, Z. Jiang, Y. Ma, Y. Wang,* Pressure-Induced Phase Transition, Jahn-Teller Suppression, Optical and Electronic Property Evolutions in Ruddlesden-Popper Perovskites $\text{Rb}_2\text{CuCl}_{4-x}\text{Br}_x$. *Chem. Asian. J.* **2021**, 16, 3437-3443.
- [4] C. Li, **K. Liu**, Y. Wang, C. Lou, N. Li, J. Feng, H. Cheng, Q. Feng, D. Jiang, J. Hao, X. Ma, T. Wen, L. He, X. Yu, B. Yue, Y. Wang,* Sequential Charge Transfer and Magnetic Ordering in Quasi-One-Dimensional Antiferromagnet CrSbS_3 . *J. Am. Chem. Soc.* **2025**, 147, 8642-8651.
- [5] C. Li, **K. Liu**, H. Yan, L. Zhang, D. Jiang, T. Wen, B. Yue, Y. Wang,* Lateral Heterostructures Fabricated via Artificial Pressure Gradient. *Adv. Mater.* **2024**, 2407922.
- [6] K. Liu, **K. Liu**, S. Hao, A. Hou, J. Cao, M. Quan, Y. Wang,* C. Wolverton, J. Zhao,* Q. Liu, Stimuli-Responsive Emission from Hybrid Metal Halides. *Adv. Funct. Mater.* **2024**, 34, 2309296.
- [7] C. Li, **K. Liu**, D. Jiang, H. Yan, E. Chen, Y. Ma, H. Cheng, T. Wen, B. Yue, Y. Wang,* Pressure-Driven Polymorphic Transition, Emergent Insulator-to-Metal Transition, and Photoconductivity Switching in Violet Phosphorus. *Small* **2024**, 20, 2306758.

Academic Conferences

1. The 4th High Pressure Chemistry of CCS Congress, **Poster**, 2025, Beijing, China.
2. Academic Salon of CAEP, **Oral lecture**, 2024, Beijing, China.
3. The 33rd CCS Congress, **Poster**, 2023, Qingdao, China.

Awards

2023 Outstanding Student Scholarship (Excellent Award), CAEP

2021 2022 2023 2024 2025 First Class Academic Scholarship, CAEP

Skills and Techniques

Skills	Polycrystalline and single-crystal sample growth using solid-state synthesis, hydrothermal, and flux methods. <i>In situ</i> high-pressure characterizations using diamond anvil cells.
Techniques	Operation of XRD, SEM, Raman spectra, IR spectra, DSC, UV-vis-NIR absorption spectra, PL spectra, TAS spectra, electrical transport measurements. Experiments of SXRD, XAS, NPD in Beijing Synchrotron Radiation Facility (BSRF), Shanghai Synchrotron Radiation Facility (SSRF), Spring-8, and China Spallation Neutron Source (CSNC). Data analysis of the mentioned characterizations above.
Software	Origin, ChemDraw, Diamond, VESTA, Mercury, Topas, Fullprof, Jana, GSAS, Jade, FindIt, Dioptas, Athena.