Rui GONG, PhD

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EDUCATION

Doctor of Philosophy, Physics September 2018 - March 2023
Hong Kong University of Science and Technology
Co-supervisors: *Prof. Jiannong WANG*, Wu Chien-Shiung Professor of Science, Head and Chair Professor
Prof. Hong WANG, IEEE Fellow, Distinguished Young Scholars

Bachelor of Electronic Science and Technology September 2014 - June 2018
Xi'an Jiaotong University, Shaanxi

CURRENT POSITION

Postdoctoral Researcher May 2023 - May 2025
Institute of Technology for Carbon Neutrality, Shenzhen Institutes of Advanced Technology
Chinese Academy of Science
Postdoctoral Supervisors: *Prof. Baofu DING & Prof. Huiming CHENG*

RESEARCH INTERESTS

My research focuses on **smart stimulus-responsive materials**, with a particular emphasis on perovskite-based and low-dimensional materials for optoelectronic and photonic applications.
Selected:

- **Green Synthesis of Perovskite-based materials:** Development of multimodal-responsive perovskite/polymer composites for optical encryption, rewritable displays, and secure information storage.
- **Precise alignment of 1D/2D nanomaterials:** Innovation in 2D liquid crystal devices for ultra-sensitive electrochromic applications, enabling energy-efficient smart windows with vivid interference color.

SKILLS AND INTERESTS

Lab Techniques:	XRD, SEM, AFM, TEM, XPS, PL, PLQY, UV-Vis, FT-IR, Raman; Electrospinning, Casting, Spin-coating, 3D printing
Softwares:	OriginPro, Photoshop, Adobe illustrator, CorelDraw, 3D Max, Camera4D, COMSOL
Programming:	C/C++, Python, MATLAB
Language:	Mandarin (Native), English (Proficient), German (Basic)

RESEARCH PUBLICATIONS

Journal Articles

- **R. Gong**, S. Tian, Y. Lei, Z. Zhang, Y. Xu, R. Lyu, F. Wang, H. Zhang, Z. Huang, C. Zhu, B. Liu*, B. Ding, Tunable pure interference colors of 2D titania liquid crystal with ultrasensitive electroresponse. *Science Advances* (Accepted).
- **R. Gong**, F. Wang, J. Cheng, Y. Lu, R. Hu, H. Huang, B. Ding, H. Wang, Hydrochromic Effect of Perovskite-Polymer Composites. *ACS Nano* **18**, 33097–33104 (2024).
- **R. Gong**, F. Wang, J. Cheng, Z. Wang, Y. Lu, J. Wang, H. Wang, Weak-solvent-modulated optical encryption based on perovskite nanocrystals/polymer composites. *Chemical Engineering Journal* **446**, 137212 (2022).
- F. Wang, R. Lyu, H. Xu, **R. Gong**, B. Ding, Tunable colors from responsive 2D materials. *Responsive Materials*, e20240007 (2024).
- T. Chen, X. Mai, Y. Li, T. Wang, **R. Gong**, F. Chen, H. Huang, Z. Yan, F. Wang, Sustainable rewritable paper based on photoresponsive tungsten oxide quantum dots for anti-counterfeiting and waterproofing. *Chemical Engineering Journal* **499**, 155999 (2024).

- H. Xu, J. Liu, S. Wei, J. Luo, **R. Gong**, S. Tian, Y. Yang, Y. Lei, X. Chen, J. Wang, G. Zhong, Y. Tang, F. Wang, H.-M. Cheng, B. Ding, A multifunctional optoelectronic device based on 2D material with wide bandgap. *Light: Science & Applications* **12**, 278 (2023).
- J. Dong, R. Hu, Y. Niu, L. Sun, L. Li, S. Li, D. Pan, X. Xu, **R. Gong**, J. Cheng, Z. Pan, Q. Wang, H. Wang, Enhancing high-temperature capacitor performance of polymer nanocomposites by adjusting the energy level structure in the micro-/meso-scopic interface region. *Nano Energy* **99**, 107314 (2022).
- Z. Wang, J. Cheng, R. Hu, X. Yuan, Z. Yu, X. Xu, F. Wang, J. Dong,**R. Gong**, S. Dong, H. Wang, An approach combining additive manufacturing and dielectrophoresis for 3D-structured flexible lead-free piezoelectric composites for electromechanical energy conversion. *J. Mater. Chem. A* **9**, 26767–26776 (2021).

Patents

- H. Wang, **R. Gong**, F. Wang, A fluorescent anti-counterfeiting composite material and its preparation method, CN114561206B, Active.
- F. Wang, **R. Gong**, B. Ding, A Film Material for Unclonable Anti-Counterfeiting Labels: Preparation Method and Applications, CN117700906A, Pending.

PROJECTS

Guangdong Province Overseas Postdoctoral Talent Support 2023-2025
Key Laboratory of Intelligent Design and Application of Low-Dimensional Materials,
Participant 2025

SELECTED HONORS AND AWARDS

Full Postgraduate Studentship, HKUST 2018 - 2023
Peng Kang Scholarship & Excellent Student, XJTU 2015 - 2017
Chinese Physics Olympiad (CPhO), Bronze medal 2013