

# YITIAN WANG

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## EDUCATION

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**University of California, Riverside, CA**

*Mar. 2021 - Dec. 2025 (expected)*

Ph.D. in Electrical and Computer Engineering

Award: MRS 2023 Spring Highly Commended Student Talk Award

**Columbia University in the City of New York, NY**

*Aug. 2019 - Feb. 2021*

Master of Science, Material science and engineering

**University of California, Berkeley, CA**

*Jul. 2017 - Aug. 2017*

Summer Session

**Beijing Normal University, CN**

*Sep. 2015 - Jun. 2019*

Bachelor of Science, Physics

Award: 'Jingshi' Scholarship (2016 - 2018)

## SKILLS

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### Software / Programming

- Python (advanced), MATLAB (advanced), LaTeX (advanced), SolidWorks (intermediate)
- GSAS-II (advanced), Mantid (advanced), ImageJ (intermediate)

### Experimental Techniques

- FZ Crystal Growth (advanced), PVD (intermediate), CVD (intermediate)
- SEM (advanced), XRD (advanced), INS (advanced), Raman (intermediate), FTIR (intermediate)
- PPMS (advanced), DSC (intermediate), TGA (intermediate)
- Battery Assembly (advanced), Impedance Spectroscopy (intermediate)

## PROJECTS

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**Thermal transport and ionic mobility in solid electrolytes**

*Jun. 2021 - Jun. 2025*

*University of California*

*Riverside, CA*

- Grew single crystal samples with floating zone method using image furnace.
- Studied the physical properties in comparison with other solid electrolytes.

**Inelastic neutron scattering on LLZTO single crystal**

*Jan. 2022 - Jul. 2023*

*Oak Ridge National Laboratory*

*Oak Ridge, TN*

- Conducted inelastic neutron scattering experiments using TAX and ARCS.
- Processed and analyzed the data with Mantid and Python.

**Two-channel fitting model for thermal conductivity**

*Mar. 2022 - Sep. 2023*

*University of California*

*Riverside, CA*

- Developed a expandable fitting model for thermal conductivity data in MatLab.

**Advanced separator of lithium-ion battery**

*Oct. 2019 - Jan. 2021*

*Columbia University*

*New York, NY*

- Made composite battery separator with  $\gamma - C_3N_4$  and PVDF.
- Assembled full cell batteries and tested electrochemical properties.

### First-principle calculation of olivine structure

*Columbia university*

*Sep. 2019 - Jan. 2020*

*New York, NY*

- Calculated the stable olivine structure with hydrogen defects with Quantum ESPRESSO.

### Low temperature uniaxial strain device

*Beijing Normal University*

*Sep. 2018 - May 2019*

*Beijing, CN*

- Modeled devices in Solidworks to apply uniaxial pressure on film samples utilizing thermal expansion.
- Tested the strain induced detwinning effect with PPMS.

## SELECTED PUBLICATIONS

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- Glass-like thermal transport in polycrystalline perovskite lithium-ion conductor  $Li_{3/8}Sr_{7/16}Hf_{1/4}Ta_{3/4}O_3$ 
  - Chemical Communications, 2025
  - **Y. Wang**, Q. Jia, S. Li, L. Shi, Y. Li, X. Chen
- Low Thermal Conductivity and Lattice Anharmonicity of NaSICON-type Solid Electrolyte  $Na_3Zr_2Si_2PO_{12}$ 
  - Tungsten, 2025
  - **Y. Wang**, Q. Jia, S. Li, L. Shi, Y. Li, X. Chen
- Origin of intrinsically low thermal conductivity in a garnet-type solid electrolyte: Linking lattice and ionic dynamics with thermal transport
  - PRX Energy, 2025
  - **Y. Wang**, Y. Su, J. Carrete, H. Zhang, N. Wu, Y. Li, H. Li, J. He, Y. Xu, S. Guo, Q. Cai, D. L. Abernathy, T. Williams, K. V. Kravchyk, M. V. Kovalenko, G. K. H. Madsen, C. Li, X. Chen
- Thermal properties and lattice anharmonicity of Li-ion conducting garnet solid electrolyte  $Li_{6.5}La_3Zr_{1.5}Ta_{0.5}O_{12}$ 
  - Journal of Materials Chemistry A, 2024
  - **Y. Wang**, S. Li, N. Wu, Q. Jia, T. Hoke, L. Shi, Y. Li, X. Chen
- Enhanced magnon thermal transport in yttrium-doped spin ladder compounds  $Sr_{14-x}Y_xCu_{24}O_{41}$ 
  - Journal of Applied Physics, 2024
  - S. Li, S. Guo, **Y. Wang**, H. Li, Y. Xu, V. Carta, J. Zhou, X. Chen
- Size-dependent magnon thermal transport in a nanostructured quantum magnet
  - Cell Reports Physical Science, 2024
  - S. Guo, H. Li, X. Bai, **Y. Wang**, S. Li, R. E. Dunin-Borkowski, J. Zhou, X. Chen
- Crystal structure and thermoelectric properties of layered van der Waals semimetal  $ZrTiSe_4$ 
  - Chemistry of Materials, 2022

- Y. Xu, Z. Barani, P. Xiao, S. Sudhindra, **Y. Wang**, A. A. Rezaie, V. Carta, K. N. Bozhilov, D. Luong, B. P. T. Fokwa, F. Kargar, A. A. Balandin, X. Chen
- Single crystal growth and electrochemical studies of garnet-type fast Li-ion conductors
  - Tungsten, 2022
  - **Y. Wang**, X. Chen

## EXTRA-CIRRICULAR

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GSA Python Coding Contest	Aug. 2020
COMAP Mathematical Contest in Modeling	Jan. 2017
BNU Physics Department Soccer Team	2015 - 2019