

Stanford



Xin Xu

Postdoctoral Scholar, Materials Science and Engineering

Bio

PROFESSIONAL EDUCATION

- B.S., Nanjing University , Physics (2014)
- Ph.D., Northwestern University , Applied Physics (2019)

STANFORD ADVISORS

- William Chueh, Postdoctoral Faculty Sponsor

LINKS

- LinkedIn: <https://www.linkedin.com/in/xinxu001>
- Google Scholar: <https://scholar.google.com/citations?hl=en&user=JuKKIYIAAAAJ>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Xu's research focuses on a fundamental understanding of charge transport and the related electro-chemo-mechanical mechanism in mixed electronic and ionic conductors via methods of operando local multimodal characterization. This encompasses a broad class of systems in the fields such as solid oxide fuel cells, solid state batteries and memristors, with research areas including charge transport theory, interface characterization, and novel device fabrication.

PROJECTS

- Failure Mechanism in Solid State Batteries - Stanford University (11/1/2019 - present)
- Charge Transport across Single Grain Boundaries in Oxide Electrolytes - Northwestern University (9/1/2014 - 9/6/2019)

Publications

PUBLICATIONS

- **Persistent and partially mobile oxygen vacancies in Li-rich layered oxides** *NATURE ENERGY*
Csernica, P. M., Kalirai, S. S., Gent, W. E., Lim, K., Yu, Y., Liu, Y., Ahn, S., Kaeli, E., Xu, X., Stone, K. H., Marshall, A. F., Sinclair, R., Shapiro, et al
2021
- **Local Multimodal Electro-Chemical-Structural Characterization of Solid-Electrolyte Grain Boundaries** *ADVANCED ENERGY MATERIALS*
Xu, X., Carr, C., Chen, X., Myers, B. D., Huang, R., Yuan, W., Choi, S., Yi, D., Phatak, C., Haile, S. M.
2021; 11 (10)
- **Quantifying leakage fields at ionic grain boundaries using off-axis electron holography** *JOURNAL OF APPLIED PHYSICS*
Xu, X., Barrows, F., Dravid, V. P., Haile, S. M., Phatak, C.

2020; 128 (21)

- **Variability and origins of grain boundary electric potential detected by electron holography and atom-probe tomography** *NATURE MATERIALS*

Xu Xin, Liu Yuzi, Wang Jie, Isheim, D., Dravid, V. P., Phatak, C., Haile, S. M.

2020; 19 (8): 887-+

- **Chemical surface exchange of oxygen on CeO₂-delta in an O₂/H₂O atmosphere** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*

Ji, H., Xu, X., Haile, S. M.

2017; 19 (43): 29287-29293