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Bio

STANFORD ADVISORS

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Publications

PUBLICATIONS

- **Defect-Engineered Scaling of Lead-Free Ferroelectrics with Ultra-Low-Voltage Switching.** *Nano letters*
Ghanbari, R., Wang, J., Kp, H., Shi, Z., Khandelwal, A., Koons, K., Rodrigues, E., Zhou, T., Holt, M., Muller, D. A., Hwang, H. Y., Xu, R.
2026
- **Freestanding Ordered Intermetallic Nanomembranes Released from Etchable Oxide Templates.** *Journal of the American Chemical Society*
Wang, J., Cui, Y., Blake, E., Li, J., Wei, X., Khandelwal, A., Hoogendoorn, L., Yu, Y., Theuss, F., Han, Y., Wang, T. C., Zhang, G., Wu, et al
2026
- **Atomic-Scale Moiré and Electronic Structure Analysis of Twisted Epitaxial MoS₂-Au-MoS₂ Heterostructures.** *Nano letters*
Cui, Y., Xu, K., Ren, P., Yuan, L., Czaja, P., Barnum, A., Sarkar, P., Altman, A., Bustillo, K., Kundu, S., Ramdas, A., Wang, X., Wan, et al
2026
- **Reducing the Strain Required for Ambient-Pressure Superconductivity in Ruddlesden-Popper Bilayer Nickelates.** *Advanced materials (Deerfield Beach, Fla.)*
Tarn, Y., Liu, Y., Theuss, F., Li, J., Wang, B. Y., Bhatt, L., Wang, J., Song, J., Thampy, V., Goodge, B. H., Muller, D. A., Shen, Z. X., Yu, et al
2026: e20724
- **Freestanding SrNbO₃ membranes as flexible transparent conductors** *APL MATERIALS*
Ko, E., Wang, B., Lee, J., Wang, J., Crust, K. J., Hwang, H. Y.
2026; 14 (1)
- **Strain-induced lead-free morphotropic phase boundary.** *Nature communications*
Ghanbari, R., Kp, H., Patel, K., Zhou, H., Zhou, T., Liu, R., Wu, L., Khandelwal, A., Crust, K. J., Hazra, S., Carroll, J., Meyers, C. J., Wang, et al
2025; 16 (1): 7766
- **Fermi Level Equilibration and Charge Transfer at the Exsolved Metal-Oxide Interface.** *Journal of the American Chemical Society*
Wang, J., Yang, J., Wardini, J. L., Waluyo, I., Hunt, A., Crumlin, E. J., Fairley, N., Bowman, W. J., Hwang, H. Y., Yildiz, B.
2025
- **Molecular H₂ as the Reducing Agent in Low-Temperature Oxide Reduction Using Calcium Hydride.** *Journal of the American Chemical Society*
Wang, J., Yu, Y., Abdelkawy, A., Li, J., Li, J., Yang, J., Ko, E. K., Lee, Y., Thampy, V., Cui, Y., Todorova, M., Neugebauer, J., Hwang, et al
2025
- **Recommended strategies for quantifying oxygen vacancies with X-ray photoelectron spectroscopy** *JOURNAL OF THE EUROPEAN CERAMIC SOCIETY*
Wang, J., Mueller, D. N., Crumlin, E. J.
2024; 44 (15)
- **Ion irradiation to control size, composition and dispersion of metal nanoparticle exsolution** *ENERGY & ENVIRONMENTAL SCIENCE*
Wang, J., Woller, K. B., Kumar, A., Zhang, Z., Zhou, H., Waluyo, I., Hunt, A., LeBeau, J. M., Yildiz, B.

2023; 16 (11): 5464-5478

- **Roadmap on exsolution for energy applications** *JOURNAL OF PHYSICS-ENERGY*
Neagu, D., Irvine, J. S., Wang, J., Yildiz, B., Opitz, A. K., Fleig, J., Wang, Y., Liu, J., Shen, L., Ciucci, F., Rosen, B. A., Xiao, Y., Xie, et al
2023; 5 (3)
- **Fast Surface Oxygen Release Kinetics Accelerate Nanoparticle Exsolution in Perovskite Oxides** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Wang, J., Kalaev, D., Yang, J., Waluyo, I., Hunt, A., Sadowski, J. T., Tuller, H. L., Yildiz, B.
2023; 145 (3): 1714-1727
- **Exsolution-Driven Surface Transformation in the Host Oxide** *NANO LETTERS*
Wang, J., Kumar, A., Wardini, J. L., Zhang, Z., Zhou, H., Crumlin, E. J., Sadowski, J. T., Woller, K. B., Bowman, W. J., LeBeau, J. M., Yildiz, B.
2022; 22 (13): 5401-5408
- **Strain-Dependent Surface Defect Equilibria of Mixed Ionic-Electronic Conducting Perovskites** *CHEMISTRY OF MATERIALS*
Wang, J., Yang, J., Opitz, A., Kalaev, D., Nenning, A., Crumlin, E. J., Sadowski, J. T., Waluyo, I., Hunt, A., Tuller, H. L., Yildiz, B.
2022; 34 (11): 5138-5150
- **Anodic Shock-Triggered Exsolution of Metal Nanoparticles from Perovskite Oxide** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Fan, W., Wang, B., Gao, R., Dimitrakopoulos, G., Wang, J., Xiao, X., Ma, L., Wu, K., Yildiz, B., Li, J.
2022; 144 (17): 7657-7666
- **Thermally Controlled Activation and Passivation of Surface Chemistry and Oxygen-Exchange Kinetics on a Perovskite Oxide** *CHEMISTRY OF MATERIALS*
Tripkovic, D., Wang, J., Kungas, R., Mogensen, M., Yildiz, B., Hendriksen, P.
2022; 34 (4): 1722-1736
- **Bulk and surface exsolution produces a variety of Fe-rich and Fe-depleted ellipsoidal nanostructures in $\text{La}_{0.6}\text{Sr}_{0.4}\text{FeO}_3$ thin films** *NANOSCALE*
Syed, K., Wang, J., Yildiz, B., Bowman, W. J.
2022; 14 (3): 663-674
- **Exsolution Synthesis of Nanocomposite Perovskites with Tunable Electrical and Magnetic Properties** *ADVANCED FUNCTIONAL MATERIALS*
Wang, J., Syed, K., Ning, S., Waluyo, I., Hunt, A., Crumlin, E. J., Opitz, A. K., Ross, C. A., Bowman, W. J., Yildiz, B.
2022; 32 (9)
- **Tuning Point Defects by Elastic Strain Modulates Nanoparticle Exsolution on Perovskite Oxides** *CHEMISTRY OF MATERIALS*
Wang, J., Yang, J., Opitz, A. K., Bowman, W., Bliem, R., Dimitrakopoulos, G., Nenning, A., Waluyo, I., Hunt, A., Gallet, J., Yildiz, B.
2021; 33 (13): 5021-5034
- **Hf Deposition Stabilizes the Surface Chemistry of Perovskite Manganite Oxide** *JOURNAL OF PHYSICAL CHEMISTRY C*
Bliem, R., Kim, D., Wang, J., Crumlin, E. J., Yildiz, B.
2021; 125 (6): 3346-3354
- **Bi-directional tuning of thermal transport in SrCoO_{2-x} with electrochemically induced phase transitions** *NATURE MATERIALS*
Lu, Q., Huberman, S., Zhang, H., Song, Q., Wang, J., Vardar, G., Hunt, A., Waluyo, I., Chen, G., Yildiz, B.
2020; 19 (6): 655-+
- **Threshold catalytic onset of carbon formation on CeO_2 during CO_2 electrolysis: mechanism and inhibition** *JOURNAL OF MATERIALS CHEMISTRY A*
Wang, J., Bishop, S. R., Sun, L., Lu, Q., Vardar, G., Bliem, R., Tsvetkov, N., Crumlin, E. J., Gallet, J., Bournel, F., Waluyo, I., Yildiz, B.
2019; 7 (25): 15233-15243