



Otavio J. Marques

Postdoctoral Scholar, Photon Science, SLAC

Bio

BIO

Materials scientist with 10+ years of experience in solid-state chemistry, electrochemistry, and advanced characterization, with a focus on Li-ion and Na-ion battery development. Currently contributing to the U.S. DOE's DRX+ and LENS initiatives through the design, synthesis, and diagnosis of next-generation energy-storage materials. Also involved in the HERMES consortium, supporting critical-mineral characterization and high-throughput analytical workflows for strategic resource development.

PROFESSIONAL EDUCATION

- PhD, Illinois Institute of Technology , Materials Science (2023)
- MS, Federal University of Pernambuco , Materials Science (2018)
- BS, Federal University of Pernambuco , Materials Engineering (2016)

STANFORD ADVISORS

- Piero Pianetta, Postdoctoral Faculty Sponsor
- Johanna Weker, Postdoctoral Research Mentor

Publications

PUBLICATIONS

- **Impact of the d0transition metal on local structural transformations in disordered rock salt cathodes.** *Chemical science*
Li, T., Marques, O., Geraci, T. S., Lawrence, E. A., Zohar, A., Liu, J., Avoka, E., Navrotsky, A., Nelson Weker, J., Clement, R. J.
2025
- **Alternative Solid-State Synthesis Route for Highly Fluorinated Disordered Rock-Salt Cathode Materials for High-Energy Lithium-Ion Batteries** *ADVANCED ENERGY MATERIALS*
Avvaru, V., Li, T., Lee, G., Byeon, Y., Koirala, K., Marques, O., Rinkel, B. L. D., Fu, Y., Milsted, D., Jeong, S., Szymanski, N. J., Kunz, M., Babbe, et al
2025; 15 (28)
- **Reaction Mechanism of the Synthesis of a Disordered Rock Salt Cathode Material** *CHEMISTRY OF MATERIALS*
Liang, Z., Marques, O., Mellone, O., Masina, S. M., Cao, C. L., Sokaras, D., Weker, J., Stone, K. H.
2025
- **Structural modeling of high-entropy oxides battery anodes using x-ray absorption spectroscopy** *JOURNAL OF APPLIED PHYSICS*
Marques, O. J., Segre, C. U.
2024; 135 (22)