

FENG WANG

Role in the Center: *In situ* synchrotron characterization of solid state synthesis. Liaison with theory effort in solid state.

Current Affiliation: Brookhaven National Laboratory

Education and Training

- Ph.D., Condensed Matter Physics, University of Alberta, 2007
- M.S., Condensed Matter Physics, Nanjing University, 2000
- B.Sc., Physics, Qufu Normal University 1997

Research and Professional Experience

- **Staff Scientist**, Brookhaven National Laboratory, 2012–Present
- **Research Associate and NSERC PDF fellow**, Brookhaven National Lab, 2009–2012
- **Research Associate**, National Institute for Nanotechnology, 2007-2009

Publications and Patents

- M.J. Zhang, G. Teng, Y.C.K. Chen-Wiegart, Y. Duan, J.Y.P. Ko, J. Zheng, J. Thieme, E. Dooryhee, X. Hu, M. Li, Y. Duan, L. Yang, C. Yin, M. Ge, X. Xiao, W-K., Lee, J.Y.P. Ko, K. Amine, Z. Chen, J. Bai, F. Pan, F. Wang, Cooling Induced Surface Reconstruction during Synthesis of High-Ni Layered Oxides, *Adv. Energy Mater.*, 1901915 (in press; <https://doi.org/10.1002/aenm.201901915>).
- W. Zhang, Y. Li, L. Wu, Y. Duan, K. Kisslinger, C. Chen, D. Bock, F. Pan, Y. Zhu, A.C. Marschilok, E.S. Takeuchi, K.J. Takeuchi, F. Wang, Multi-Electron Redox via Topotactic Reaction in Magnetite, *Nat. Commun.* 10, 1972 (2019)
- M.J. Zhang, G. Teng, Y.C.K. Chen-Wiegart, Y. Duan, J.Y.P. Ko, J. Zheng, J. Thieme, E. Dooryhee, Z. Chen, J. Bai, K. Amine, F. Pan, F. Wang, Cationic Ordering Coupled to Reconstruction of Basic Building Units during Synthesis of High-Ni Layered Oxides, *J. Am. Chem. Soc.* 140, 12484 (2018).
- W. Zhang, H-C. Yu, L. Wu, H. Liu, A. Abdellahi, B. Qiu, J. Bai, B. Orvananos, F.C. Strobridge, X. Zhou, Z. Liu, G. Ceder, Y. Zhu, K. Thornton, C.P. Grey, and F. Wang, Localized Concentration Reversal of Lithium during Intercalation into Nanoparticles, *Sci. Adv.*, 4, eaao2608 (2018).
- W. Zhang, M. Topsakal, C. Cama, C. J. Pelliccione, H. Zhao, S. Ehrlich, L. Wu, Y. Zhu, A. I. Frenkel, K.J. Takeuchi, E.S. Takeuchi, A.C. Marschilok, D. Lu, F. Wang, Multi-stage Structural Transformations in Zero-strain Lithium Titanate Unveiled by in situ X-ray Absorption Fingerprints, *J. Am. Chem. Soc.*, 139, 16591 (2017).
- D. Wang, R. Kou, Y. Ren, C-J. Sun, H. Zhao, M-J. Zhang, Y. Li, A. Huq, J.Y.P. Ko, F. Pan, Y-K. Sun, Y. Yang, K. Amine, J. Bai, Z. Chen and F. Wang, Synthetic Control of Kinetic Reaction Pathway and Cationic Ordering in High-Ni Layered Cathodes, *Adv. Mater.*, 29, 1606715 (2017).
- J. Zhao, W. Zhang, A. Huq, S.T. Misture, B. Zhang, S. Guo, L. Wu, Y. Zhu, Z. Chen, K. Amine, F. Pan, J. Bai, F. Wang, *In situ Probing and Synthetic Control of Cationic Ordering in Ni-rich Layered Oxide Cathodes*, *Adv. Energy Mater.*, 8, 1601266 (2017).

- F. Wang, S-W. Kim, D-H. Seo, K. Kang, L. Wang, D. Su, J.J. Vajo, J. Wang and J. Graetz, Ternary Metal Fluorides as High Energy Cathodes for Rechargeable Li-Batteries, *Nat. Commun.*, 6, 6668 (2015).
- J. Bai, J. Hong, H. Chen, J. Graetz and F. Wang, Solvothermal Synthesis of $\text{LiMn}_{1-x}\text{Fe}_x\text{PO}_4$ Cathode Materials: A Study of Reaction Mechanisms by Time-resolved In-situ Synchrotron X-ray Diffraction, *J. Phys. Chem. C.*, 119, 2266 (2015).
- F. Wang, H-C. Yu, L. Wu, N. Pereira, A. Van Der Ven, K. Thornton, G.G. Amatucci, Y. Zhu, J. Graetz, Tracking Li Transport and electrochemical reaction in nanoparticles, *Nat. Comm.*, 3, 1201 (2012).

Synergistic Activities

- Frequent organizer of symposiums in conferences/meetings, *such as* Microscopy & Microanalysis (*latest: symposium lead organizer for M&M 2018*), Materials Research Society (*latest: symposium co-organizer for MRS 2019 Spring and Fall meetings*).
- Proposal reviewers for multiple government agencies of the U.S. DOE.
- Contributor of one chapter to the Energy Storage Factual Document (2017) -- Resource Document for the BES-DOE Basic Research Needs Workshop on Next Generation Electrical Energy Storage.