

Phosphorus anionic redox activity revealed by operando P K-edge X-ray absorption spectroscopy on diphosphonate-based conversion materials in Li-ion batteries

Sebastian Schmidt¹, Sébastien Sallard^{1,3,*}, Camelia Borca², Thomas Huthwelker², Petr Novák¹ and Claire Villevieille^{1,*}

¹ Electrochemical Energy Storage Section, Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland

² Swiss Light Source (SLS), Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland

³ Current address: Flemish Institute of Technological Research (VITO), Boeretang 200, B-2400 Mol, Belgium

*Corresponding authors: claire.villevieille@psi.ch; sebastien.sallard@vito.be

Supplementary information

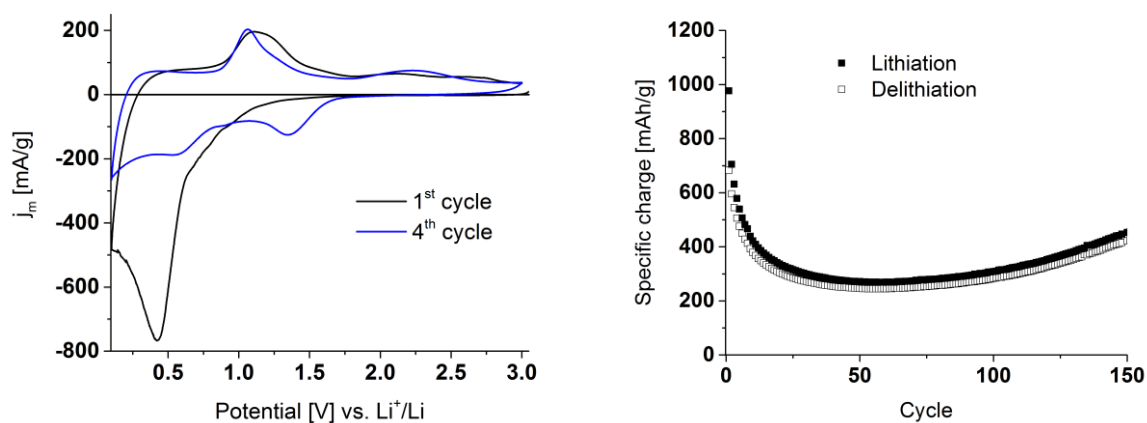


Figure S1 Cyclic voltammograms at 0.1 mV s⁻¹ (left) and specific charge vs. cycle number (right) data for the galvanostatic cycling of FeMeDP at 50 mA g⁻¹ between 0.1 – 3.0 V vs. Li⁺/Li. Reprinted with permission from J. Power Sources, 2017, 342, 879-885, © 2016 Elsevier BV. The experiments were already published in Ref. 7.

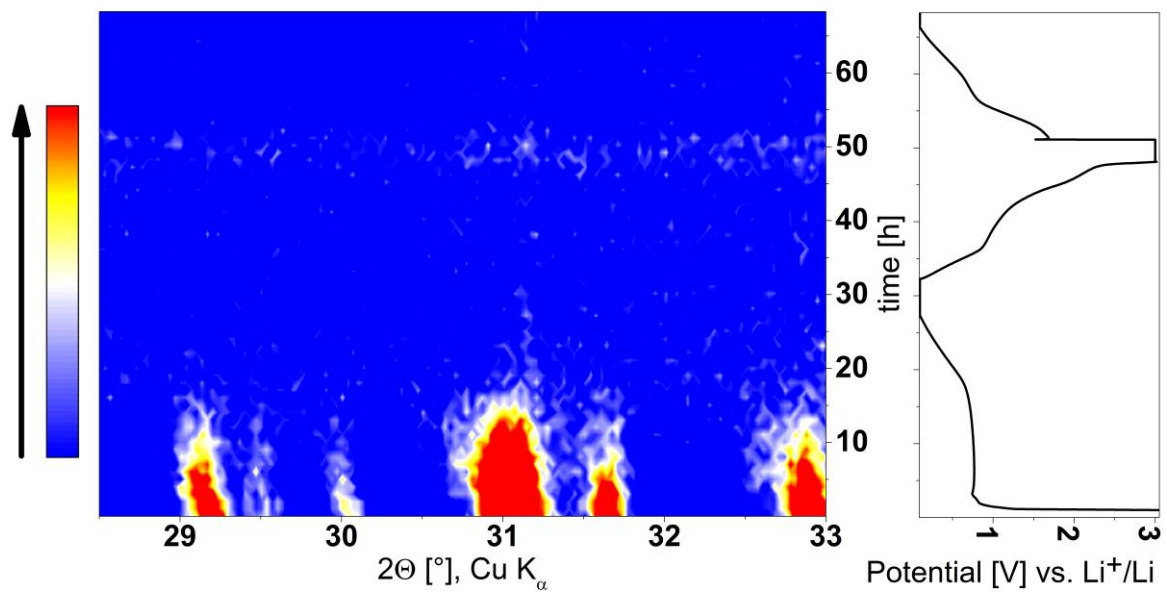


Figure S2 Contour plot of *operando* XRD patterns of FeMeDP cycled between 0.1 - 3.0 V at 50 mA g^{-1} from a previous study. Reprinted with permission from J. Power Sources, 2017, 342, 879-885, © 2016 Elsevier BV. The experiments were already published in Ref. 7.