

Supplementary information

V^{IV} Disproportionation Upon Sodium Extraction From Na₃V₂(PO₄)₂F₃ Observed by *Operando* X-ray Absorption Spectroscopy and Solid State NMR

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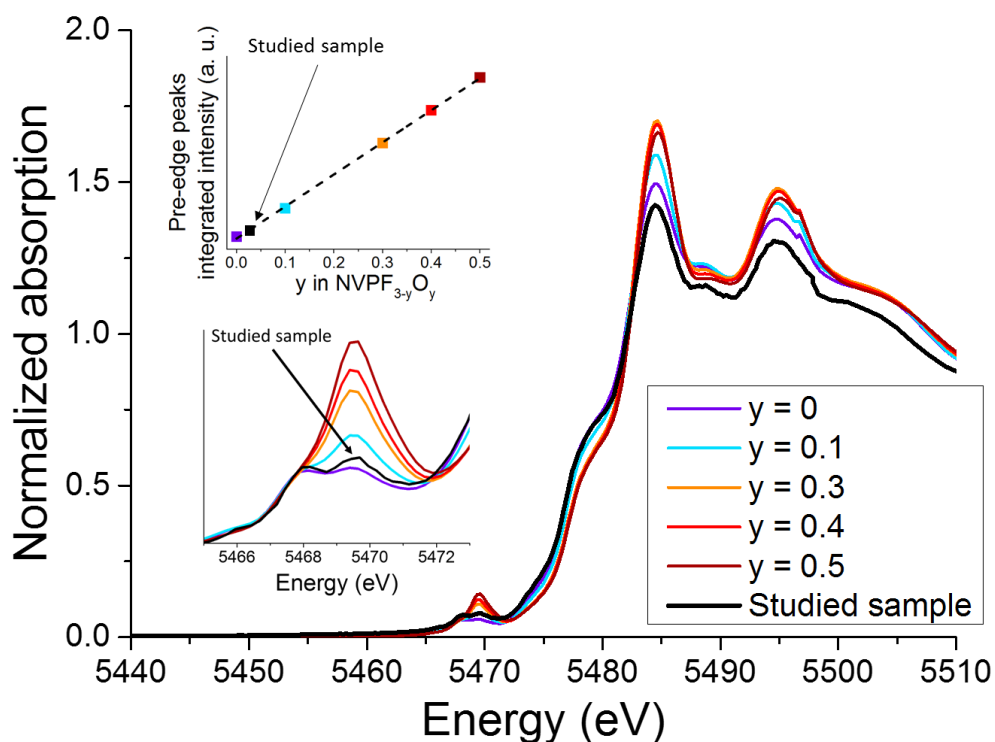


Figure 1. Vanadium K-edge XANES spectra of the studied sample compared with $\text{Na}_3\text{V}_2(\text{PO}_4)_2\text{F}_{3-y}\text{O}_y$ ($0 \leq y \leq 0.5$) samples. The insets show an enlarged graph of the pre-edge region and the associated integrated intensity. From this comparison the amount of oxygen defects in the studied sample can be estimated to 0.03.

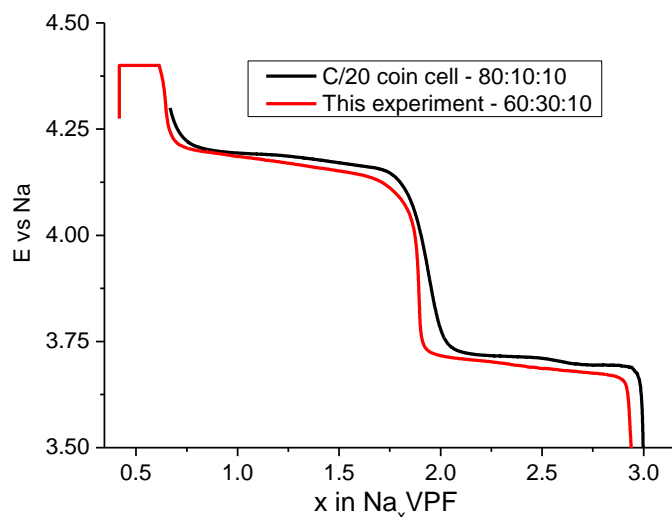


Figure 2. Comparison of electrochemical curves obtained for lithium cells $\text{Li}/\text{Na}_3\text{V}_2(\text{PO}_4)_2\text{F}_3$ in different conditions – Black: coin cell cycled at C/20 between 2.5 and 4.3 V (the formulation of the electrode being 80 wt.% of active material, 10 wt.% of carbon and 10 wt.% of PVDF); red: this experiment, i.e. the in-situ cell cycled at C/10 between 2.5 and 4.3 V (the formulation of the electrode being 60 wt.% of active material, 30 wt.% of carbon and 10 wt.% of PVDF). A very good agreement is observed between the two experiments.