Supporting Information for

Local Structural Analysis for Oxide Ionic Transport in  $La_{0.6}Sr_{0.4}FeO_{3-\delta}Cathodes$ 

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## **EXAFS** analysis



Figure S1. The EXAFS spectra  $k^3\chi$  at the (a) La *K*-edge and (b) Sr *K*-edge of La<sub>0.6</sub>Sr<sub>0.4</sub>FeO<sub>3- $\delta$ </sub> annealed under various  $p(O_2)$  at 1073 K.



Figure S2. Results of curve fitting for the inverse Fourier transform spectra for the (a) La *K*-edge and (b) Sr *K*-edge EXAFS of  $La_{0.6}Sr_{0.4}FeO_{3-\delta}$ . The experimental data and fitting simulations are indicated by dots and solid lines, respectively.