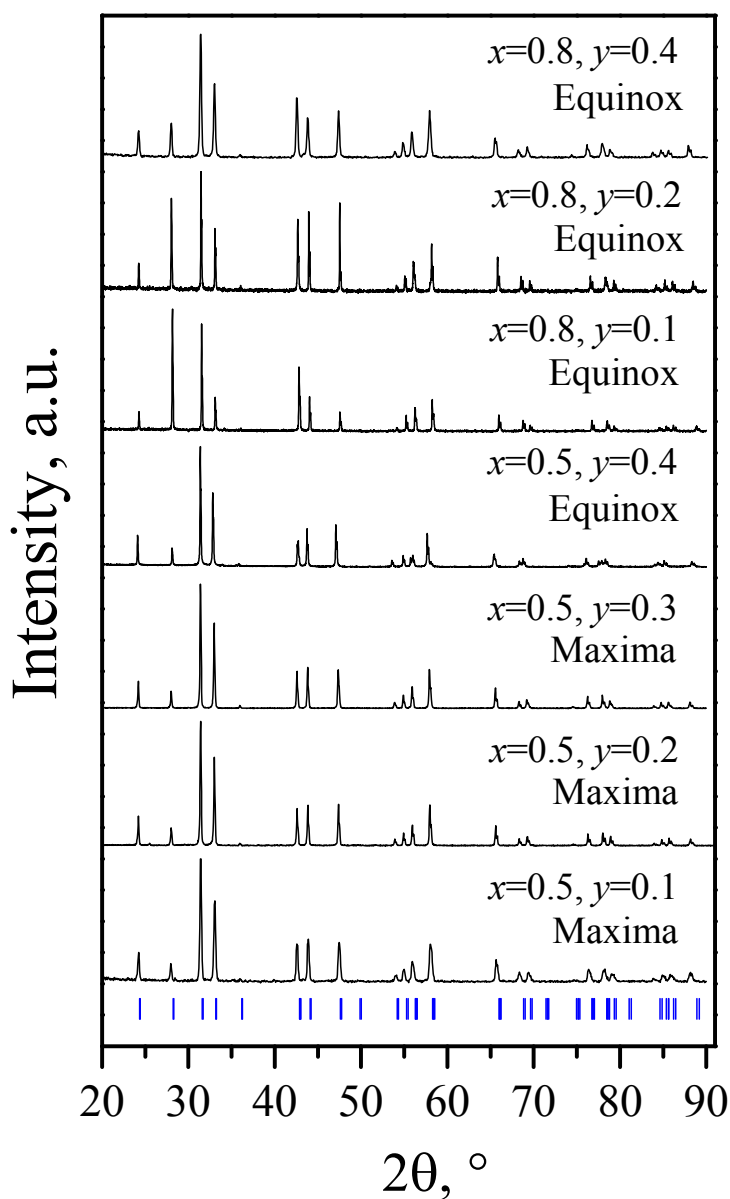


## Electronic Supplementary Information

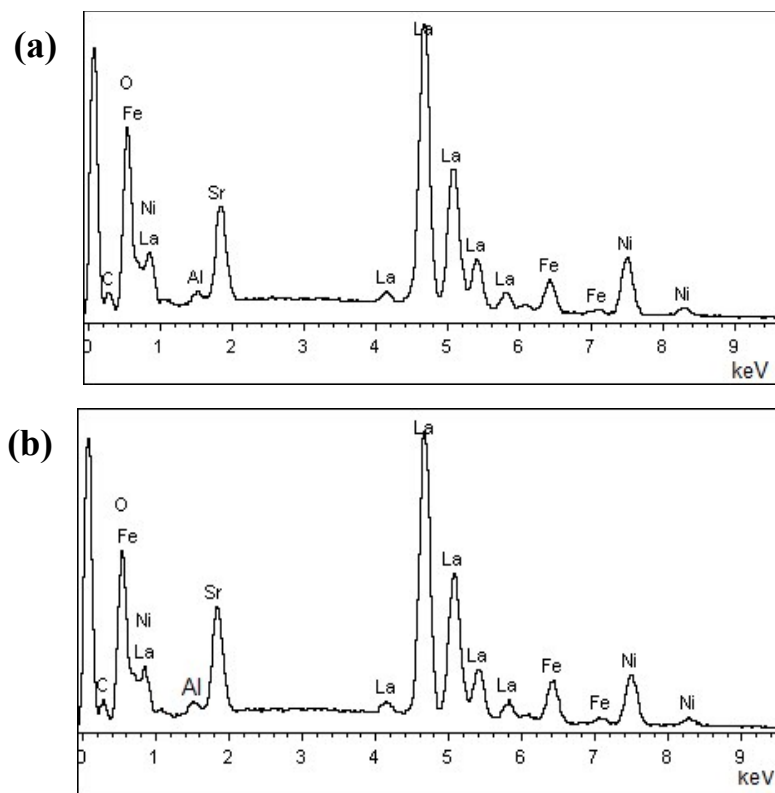
### Oxygen Transport Phenomena In $(\text{La,Sr})_2(\text{Ni,Fe})\text{O}_4$ Materials

A. R. Gilev, E. A. Kiselev and V.A. Cherepanov\*

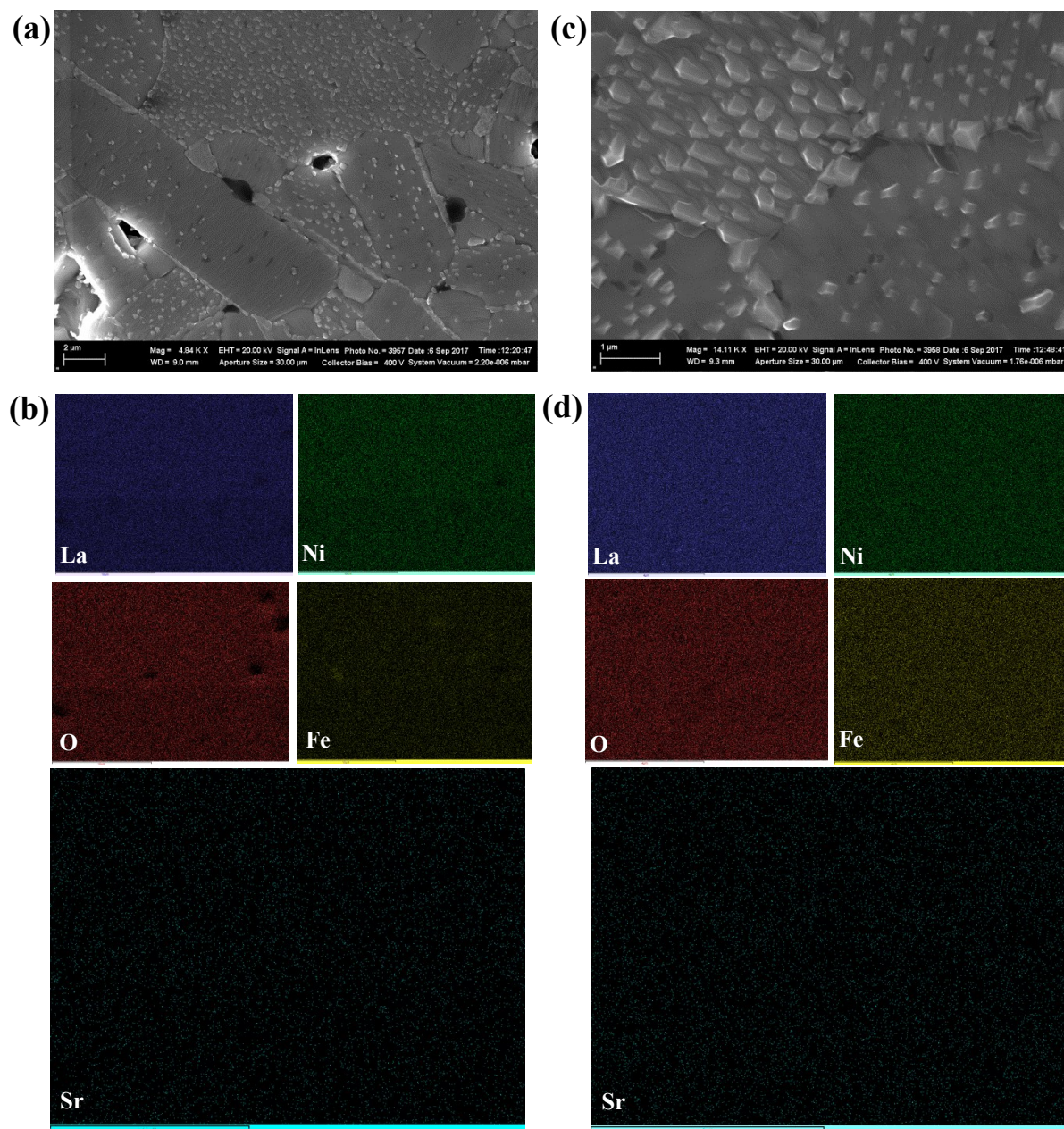


**Fig. S1** Room-temperature XRD patterns for the  $\text{La}_{2-x}\text{Sr}_x\text{Ni}_{1-y}\text{Fe}_y\text{O}_{4+\delta}$  sintered samples.

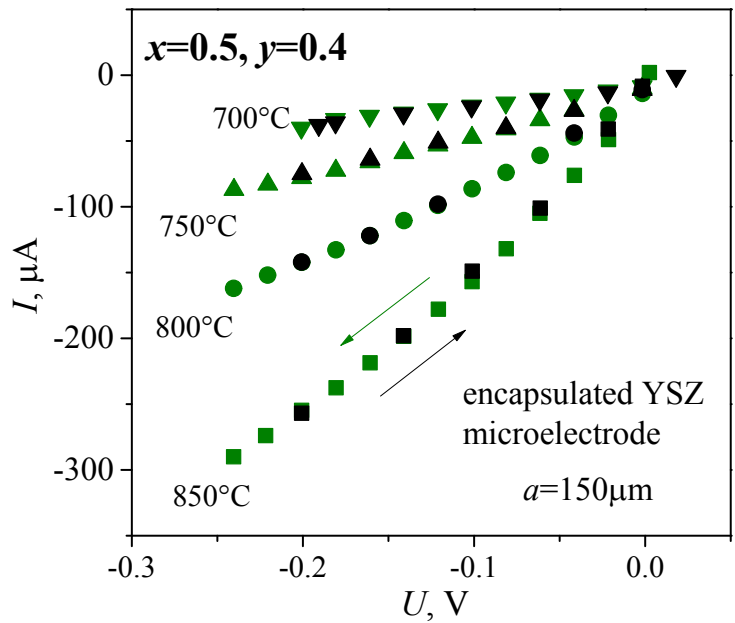
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**Fig. S2** EDX spectra for the cross-sectional surface of  $\text{La}_{1.5}\text{Sr}_{0.5}\text{Ni}_{0.7}\text{Fe}_{0.3}\text{O}_{4+6}$  (a) and  $\text{La}_{1.5}\text{Sr}_{0.5}\text{Ni}_{0.6}\text{Fe}_{0.4}\text{O}_{4+6}$  (b).



**Fig. S3** SEM micrographs and corresponding EDX mappings of the  $\text{La}_{1.5}\text{Sr}_{0.5}\text{Ni}_{0.7}\text{Fe}_{0.3}\text{O}_{4+\delta}$  (a, b) and  $\text{La}_{1.5}\text{Sr}_{0.5}\text{Ni}_{0.6}\text{Fe}_{0.4}\text{O}_{4+\delta}$  (c, d) surfaces.



**Fig. S4** Steady-state  $I$ - $U$  curves at an encapsulated YSZ micro-electrode for  $\text{La}_{1.5}\text{Sr}_{0.5}\text{Ni}_{0.6}\text{Fe}_{0.4}\text{O}_{4+\delta}$ .