

Supplementary Information

S1: The observed (symbols) and calculated (line) diffraction patterns with difference plot and the phase markers for Rietveld fitting of LNO and higher order RP phase in contact with Pt at 1000°C. Peaks associated with the Pt substrate, Pt heating strip and heating strip impurities, as discussed in the text, have been excluded., $R_{wp} = 14.7\%$ and $R_p = 10.5\%$.

