

## Supplementary Information

### Functionally graded and homogeneous composites of $\text{La}_2\text{NiO}_{4+\delta}$ and $\text{La}_{n+1}\text{Ni}_n\text{O}_{3n+1}$ ( $n = 2$ and $3$ ) solid oxide fuel cell cathodes

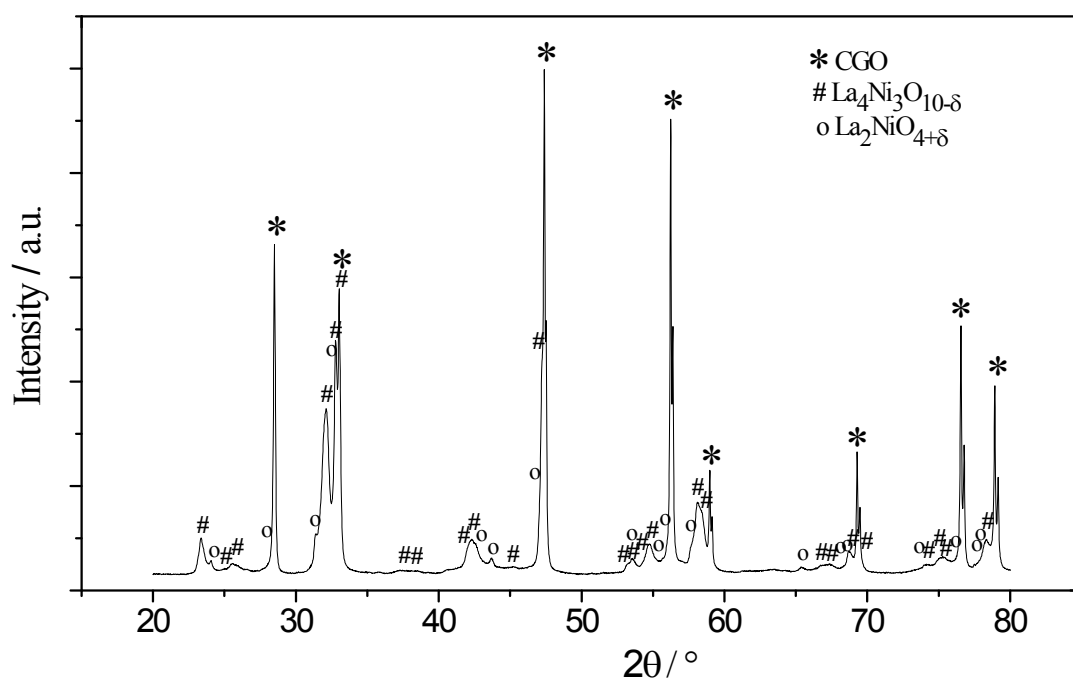
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**Fig. S1** XRD pattern of L2N1:L4N3, 50:50 wt. % composite film prepared by ESD on CGO electrolyte and sintered at 950 °C for 8 h followed by 1100 °C for 6 h in air.