## **Support information**

## Multifunction of cerium decoration on enhancing the cycling stability and rate capability of Nickel-rich layered oxide cathode

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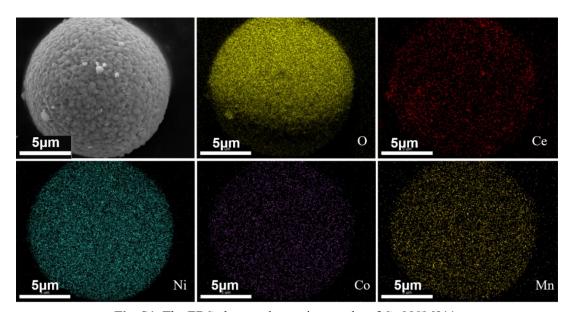


Fig. S1. The EDS elemental mapping results of Ce-NCM811.

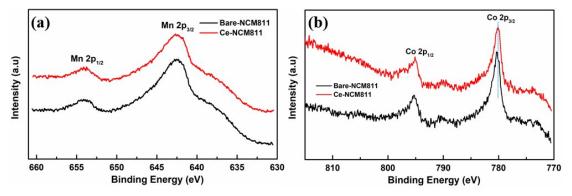


Fig. S2. XPS spectra of the Bare-NCM8111 and Ce-NCM811 (a) Mn 2p; (b) Co 2p.