Table S5 Structural parameters obtained from Rietveld refinement of the XRD diffraction pattern of S-NCM811 Phase 1 $LiNiO_2$: Space group: *R*-3m, R_{wp} = 8.43%, a = 2.8856 Å, b =2.8856 Å, c = 14.2471 Å, α = β = 90°, γ = 120°. Fraction: 94.85%. Phase 2 NiO: Space group: *F*m-3m, Fraction: 5.15%

$LiNiO_2$ (94.85%)					
Atom	**Site**	**Wyckoff position**			**Occupancy**
Li1	3b	0.0000	0.0000	0.5000	0.6850
Li2	3a	0.0000	0.0000	0.0000	0.0650
Ni1	3a	0.0000	0.0000	0.0000	0.0650
Ni2	3b	0.0000	0.0000	0.5000	0.7350
Co1	3a	0.0000	0.0000	0.0000	0.1000
Mn1	3a	0.0000	0.0000	0.0000	0.1000
O1	6c	0.0000	0.0000	0.2590	1.0000