Electronic Supplementary information for

Controlled synthesis of $LiNi_{0.5}Mn_{1.5}O_4$ cathode materials with superior electrochemical performance through urea-based solution combustion synthesis

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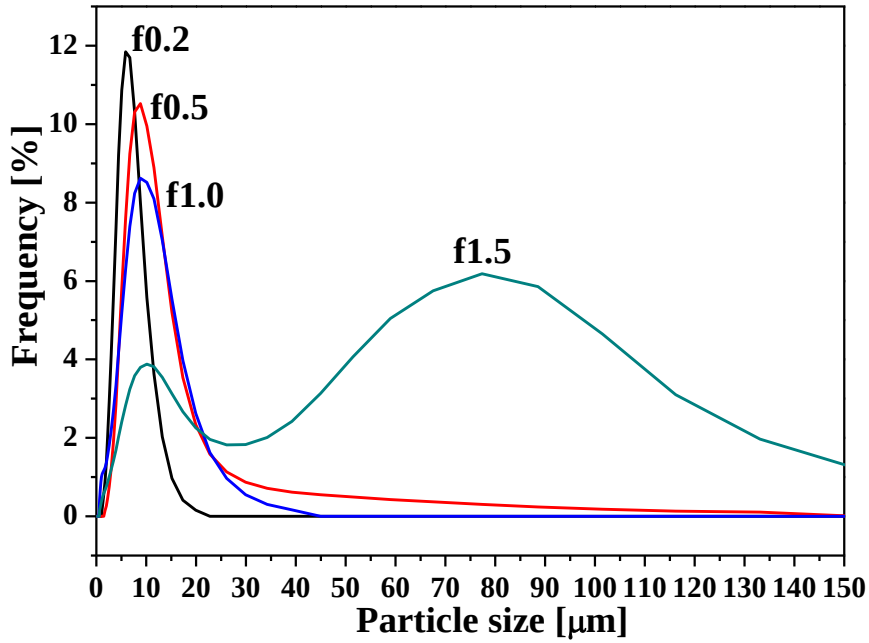

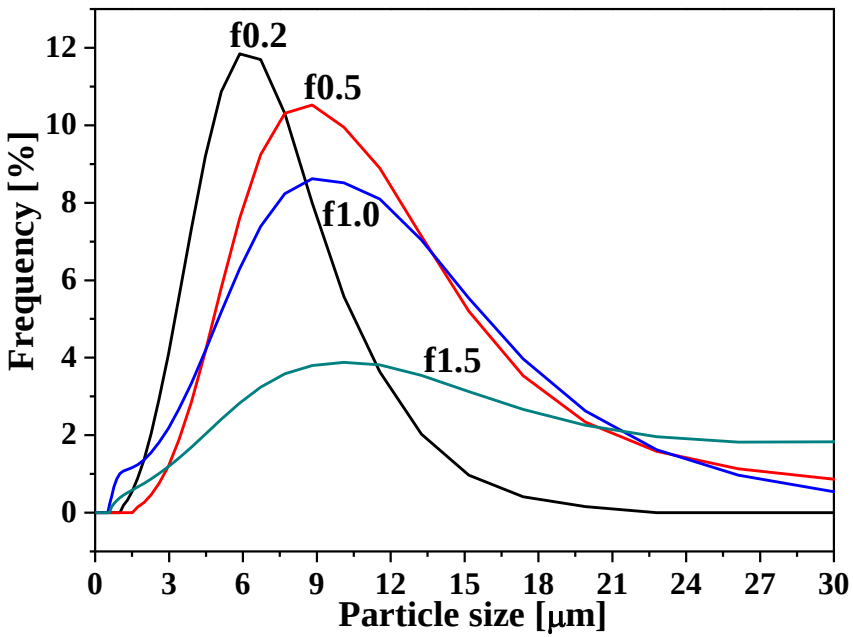

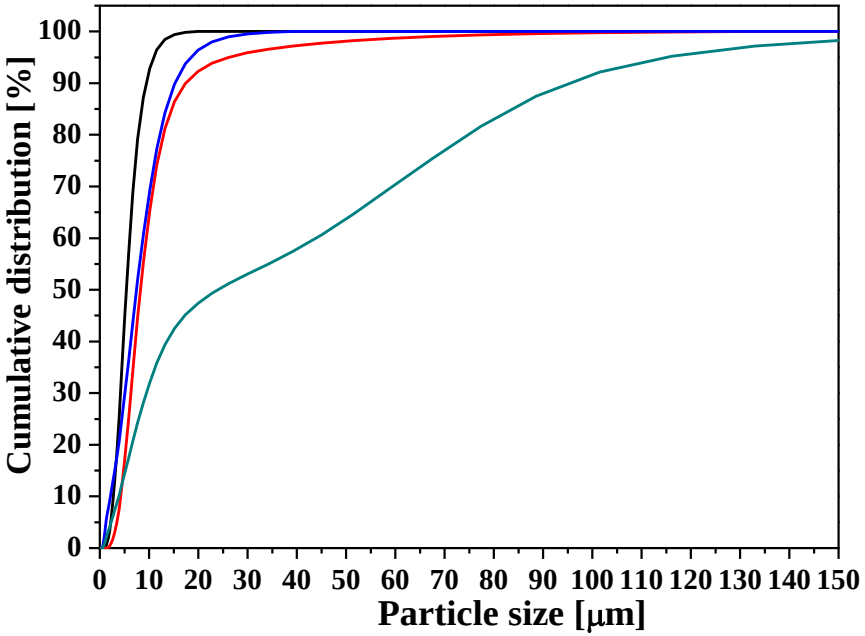

Figure S1. Particle size distribution of the products.

Table S1. Particle size distribution of the obtained products

Sample name	Average diameter [μm]	Median diameter /d50 [μm]	Modal diameter [μm]	Geometric mean diameter [μm]
f0.2-800C24h	5.8	5.4	5.5	5.2
f0.5-800C24h	10.9	8.2	8.2	8.6
f1.0-800C24h	8.4	7.5	8.3	6.5
f1.5-800C24h	40.7	23.9	72.4	21.3

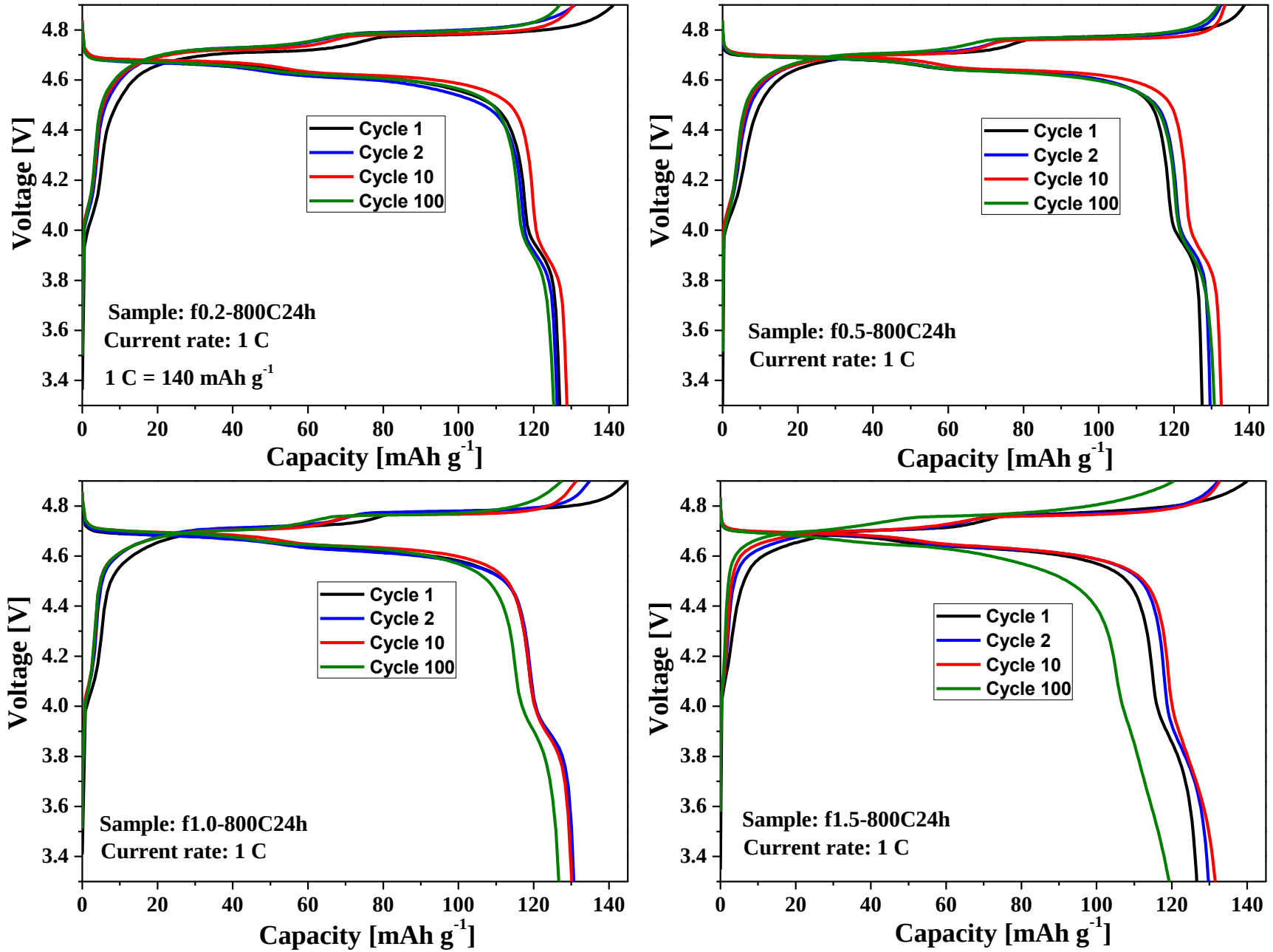

Figure S2. Charge-discharge curves of the samples at different cycles at a current rate of 1 C.

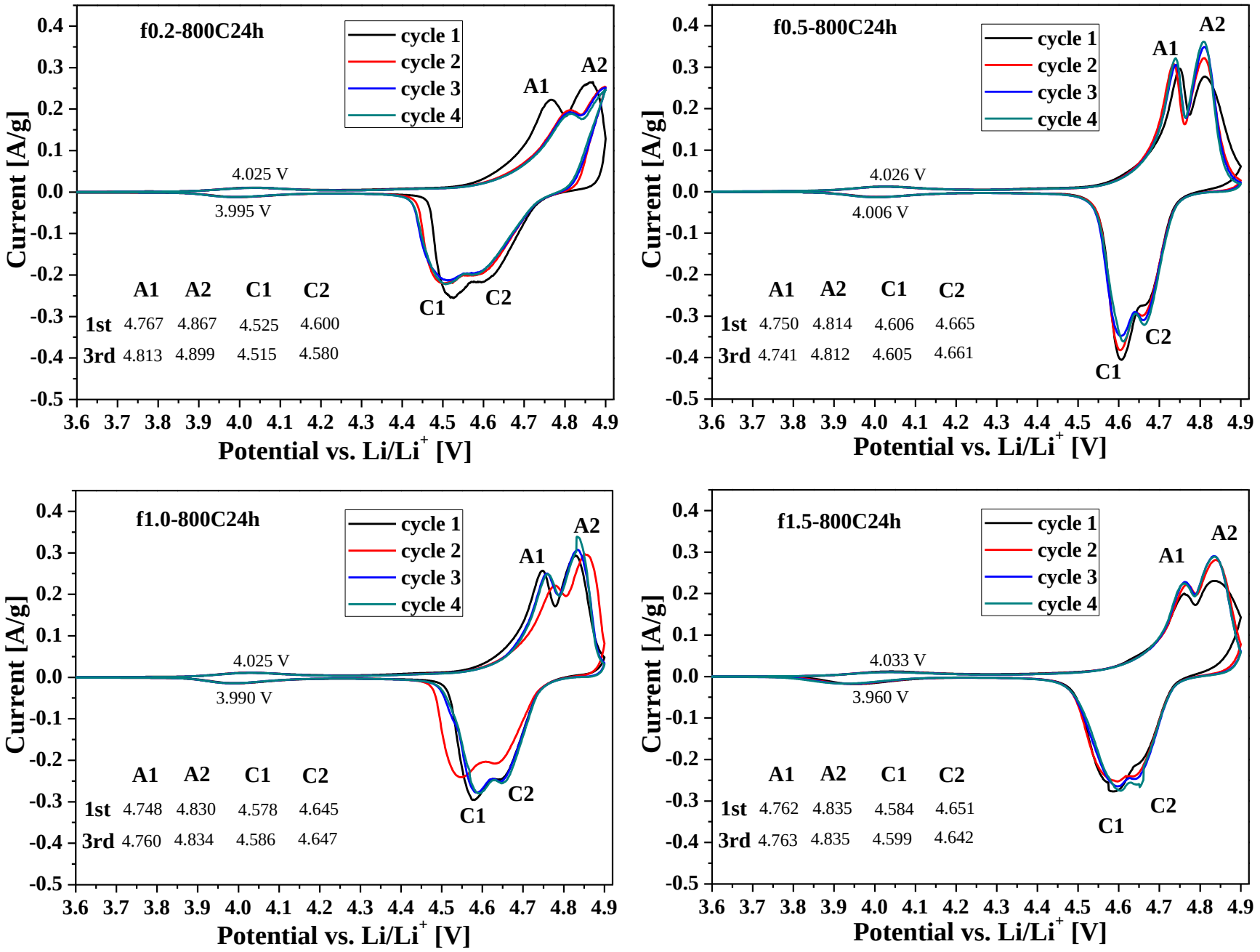

Figure S3. CV curves of the samples at a scanning rate of 0.1 mV s^{-1}.

Table S2. Difference between anodic and cathodic peak potentials of CV

	A1-C1 [V]	A2-C2 [V]	A1-C1 [V]	A2-C2 [V]
	1st cycle		*3rd cycle*	
f0.2-800C24h	0.242	0.267	0.298	0.319
f0.5-800C24h	0.144	0.149	0.136	0.151
f1.0-800C24h	0.170	0.185	0.174	0.187
f1.5-800C24h	0.178	0.184	0.164	0.193

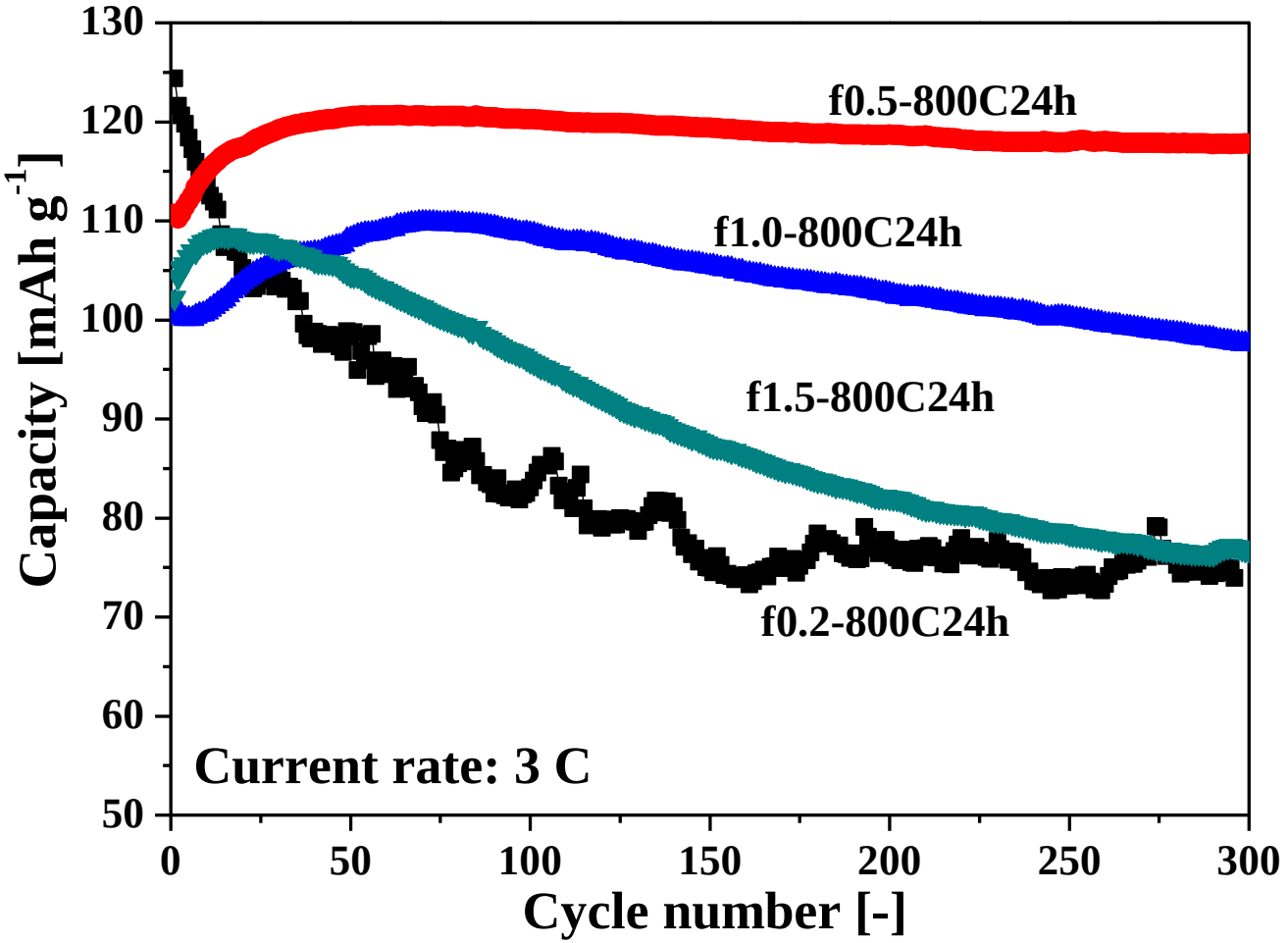

Figure S4. Cycling performance of the samples at a current rate of 3 C.

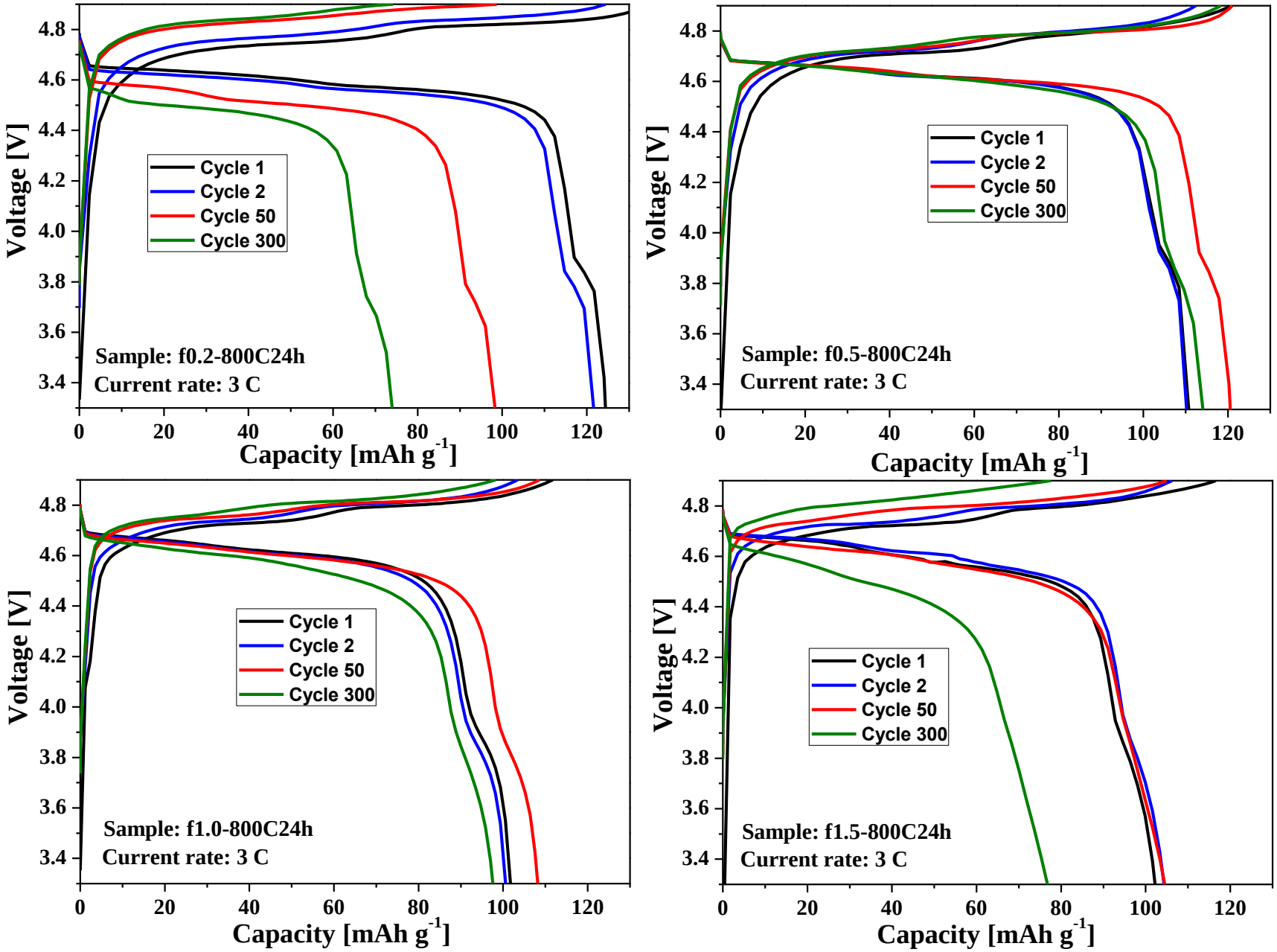

Figure S5. Charge-discharge curves of the samples at different cycles at a current rate of 3 C.

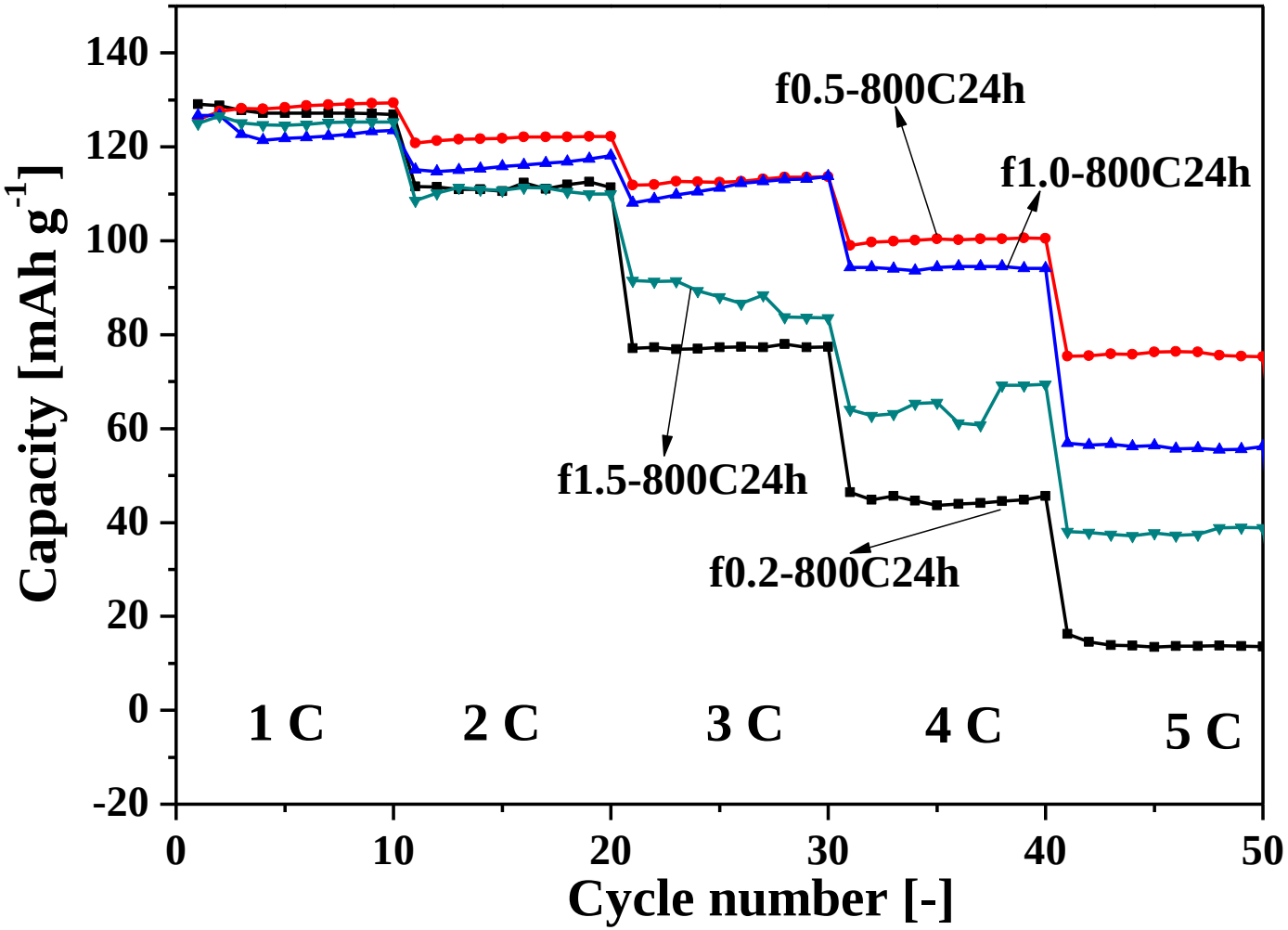

Figure S6. Cycling performance at various C rates.

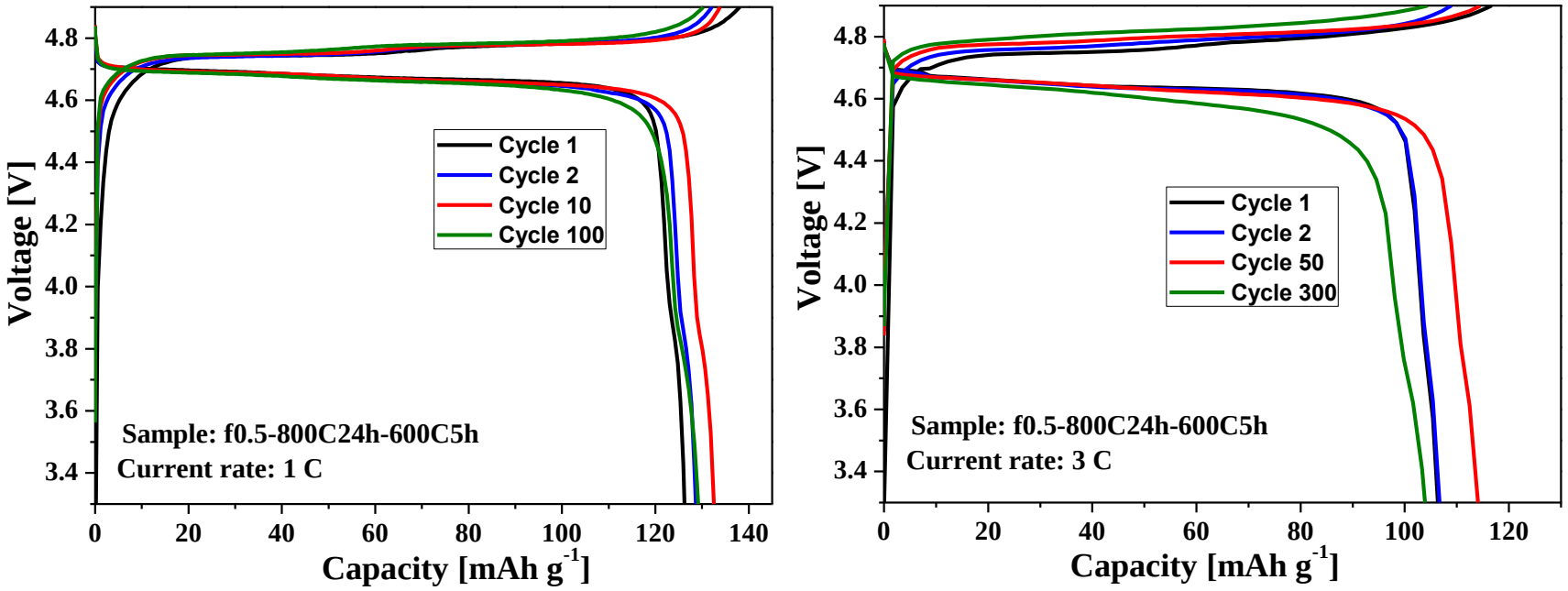

Figure S7. Charge-discharge curves of the samples of f0.5-800C24h-600C5h at 1 C and 3 C.