

Improved high-voltage cycling stability of single-crystalline $\text{LiNi}_{0.8}\text{Co}_{0.1}\text{Mn}_{0.1}\text{O}_2$ cathode by tantalum doping

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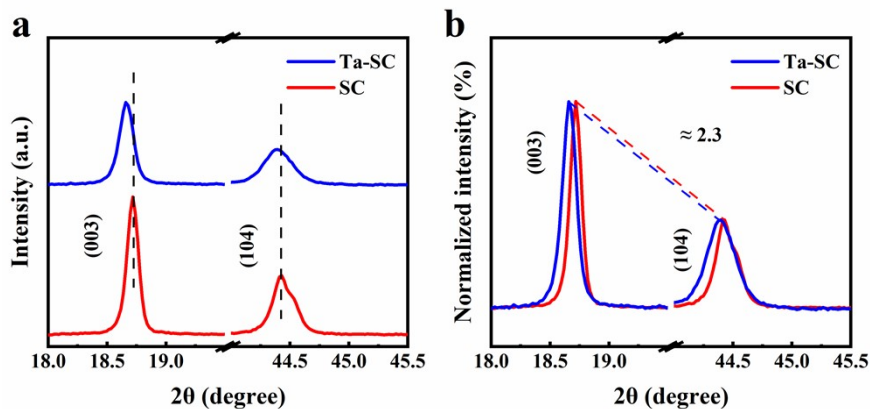


Figure S1. (a) Magnified XRD patterns of (003) and (104) peaks. (b) Enlarged the selection range with the normalized intensity.

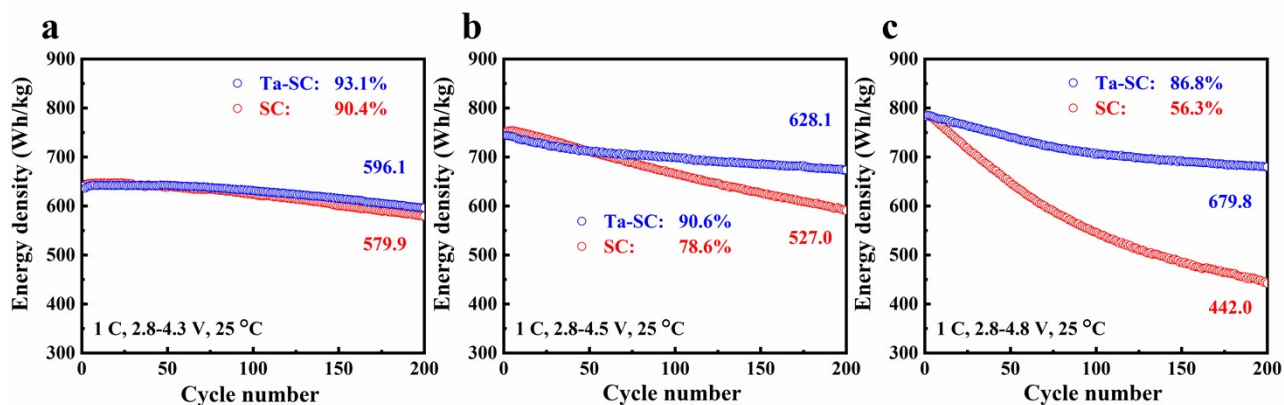


Figure S2. Energy densities of SC and Ta-SC cathodes when cycled between (a) 2.8-4.3 V, (b) 2.8-4.7 V and (c) 2.8-4.8 V at 1 C, 25 °C.

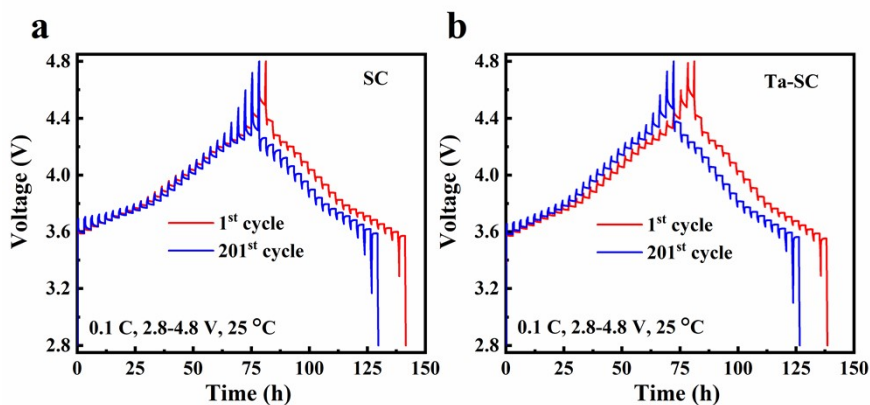


Figure S3. GITT profiles of (a) SC and (b) Ta-SC cathodes at the 1st and 201st cycle.

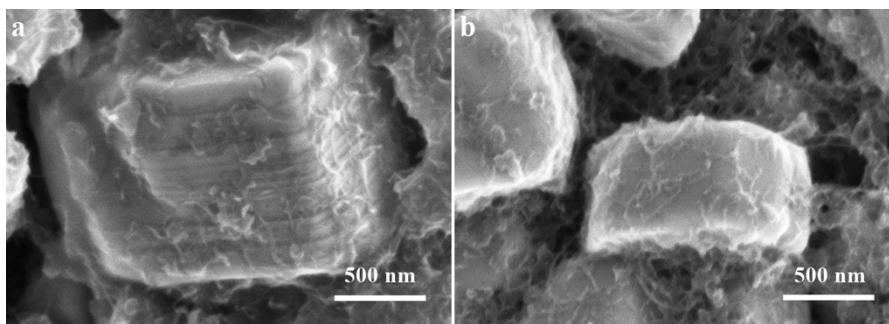


Figure S4. SEM images of (a) SC and (b) Ta-SC cathodes after 200 cycles between 2.8-4.8 V.

Table 1. ICP results of SC and Ta-SC powders.

Sample	Chemical composition (at. %)			
	Ni	Co	Mn	Ta
SC	80.13	10.00	9.87	-
Ta-SC	79.13	10.02	9.90	0.95