
Supporting Information

Separating cationic and anionic redox activity in the lithium-rich antiperovskite (Li_2Fe)SO

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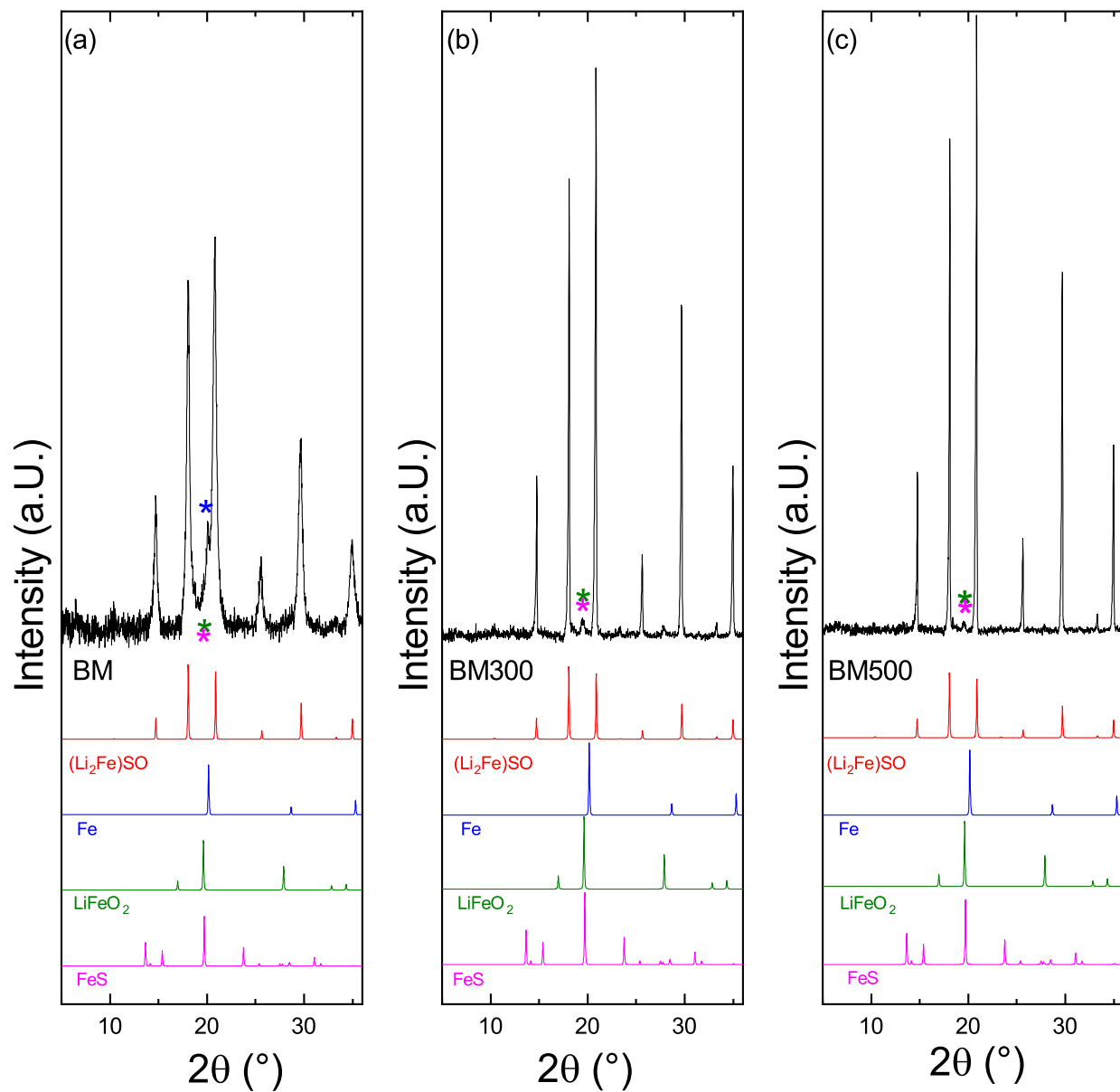


Figure S1 XRD patterns of BM (a), BM300 (b) and BM 500 (c) as well as reference patterns for (Li₂Fe)SO (ICSD No. 253936¹), Fe (ICSD No. 53451²), LiFeO₂ (ICSD No. 155031³) and FeS (ICSD No. 53526⁴).

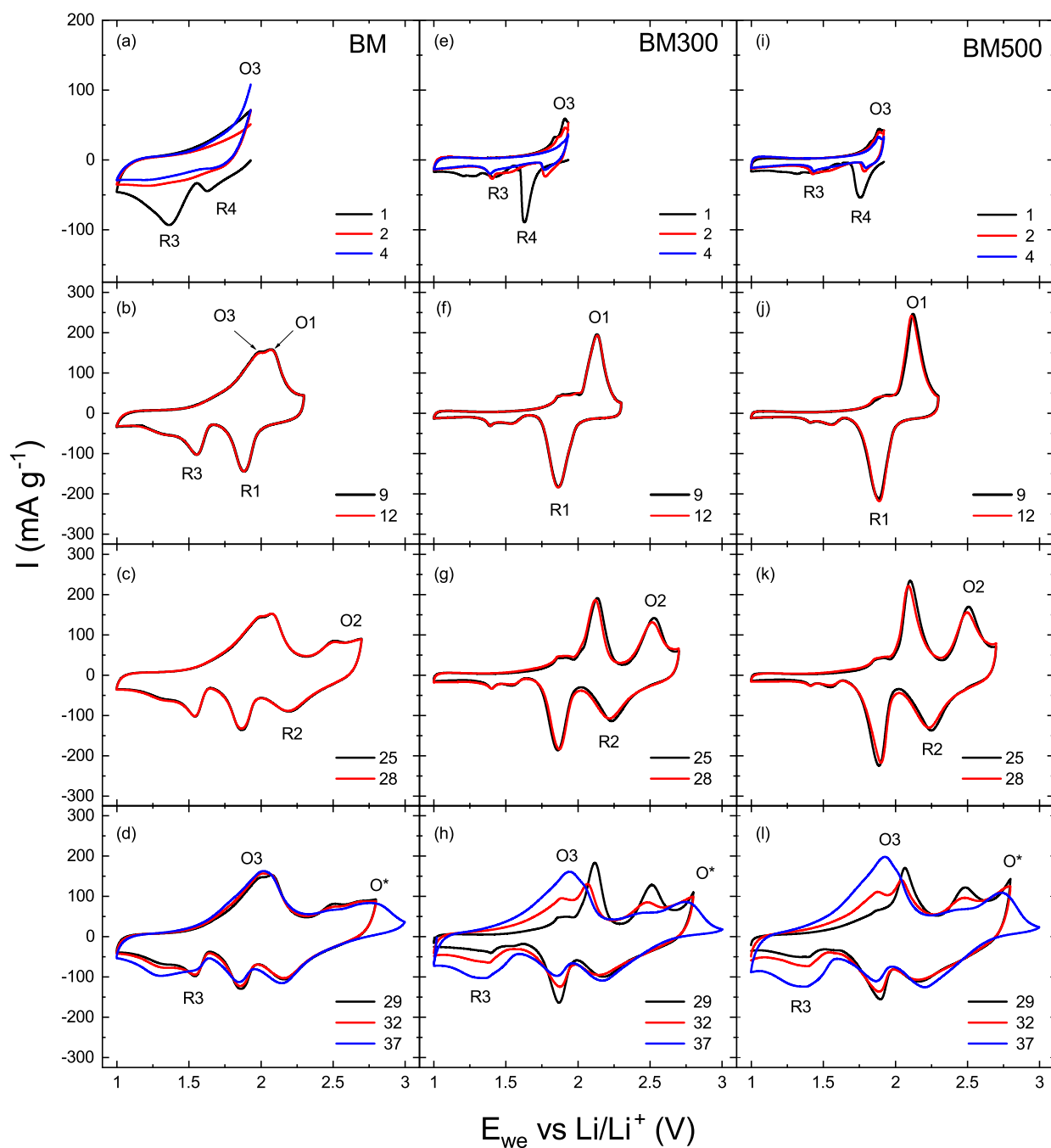


Figure S2 Cyclic voltammograms of BM (left column), BM300 (middle column) and BM500 (right column) in a potential window from 1 V to OCV (a,e,i), 2.3 V (b,f,j), 2.7 V (c,g,k) and up to 3 V (d,h,l). The cyclic voltammograms for all post-heated materials (BM300 and BM500) show a clear increase in the low-voltage function O3/R3 and a decrease in O1,O2 only after the voltage range has been extended to the high-voltage process O*.

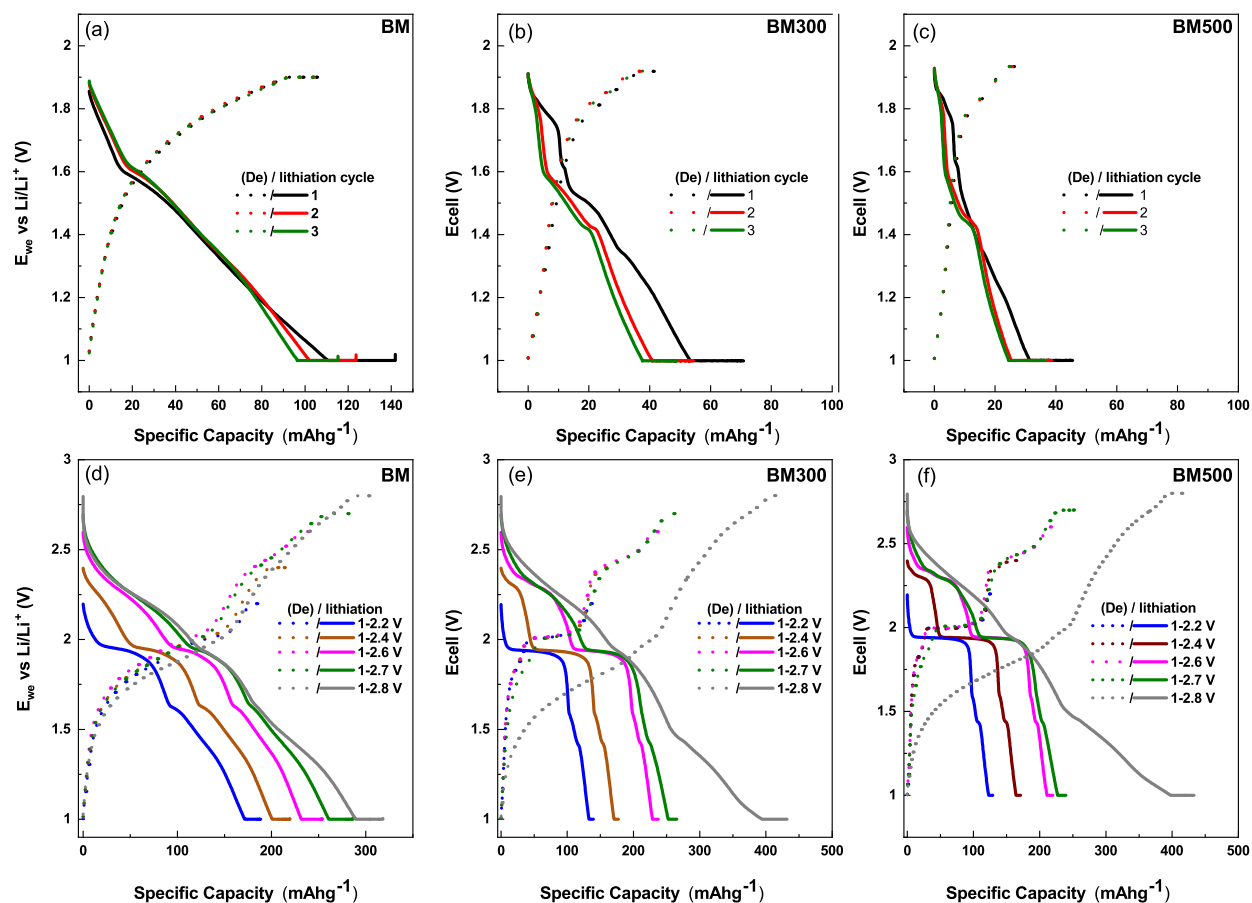


Figure S3 Potential profiles of BM (a), BM300 (b), BM500 (c) by direct discharge. Selected potential profiles of BM (d), BM300 (e), BM500 (f) measured by a constant current constant voltage protocol ($I=C/10$ and a holding time of 5 h) and a step-like increase in 0.1 V increments of the maximum voltage. The colors used symbolize distinct voltage regions.

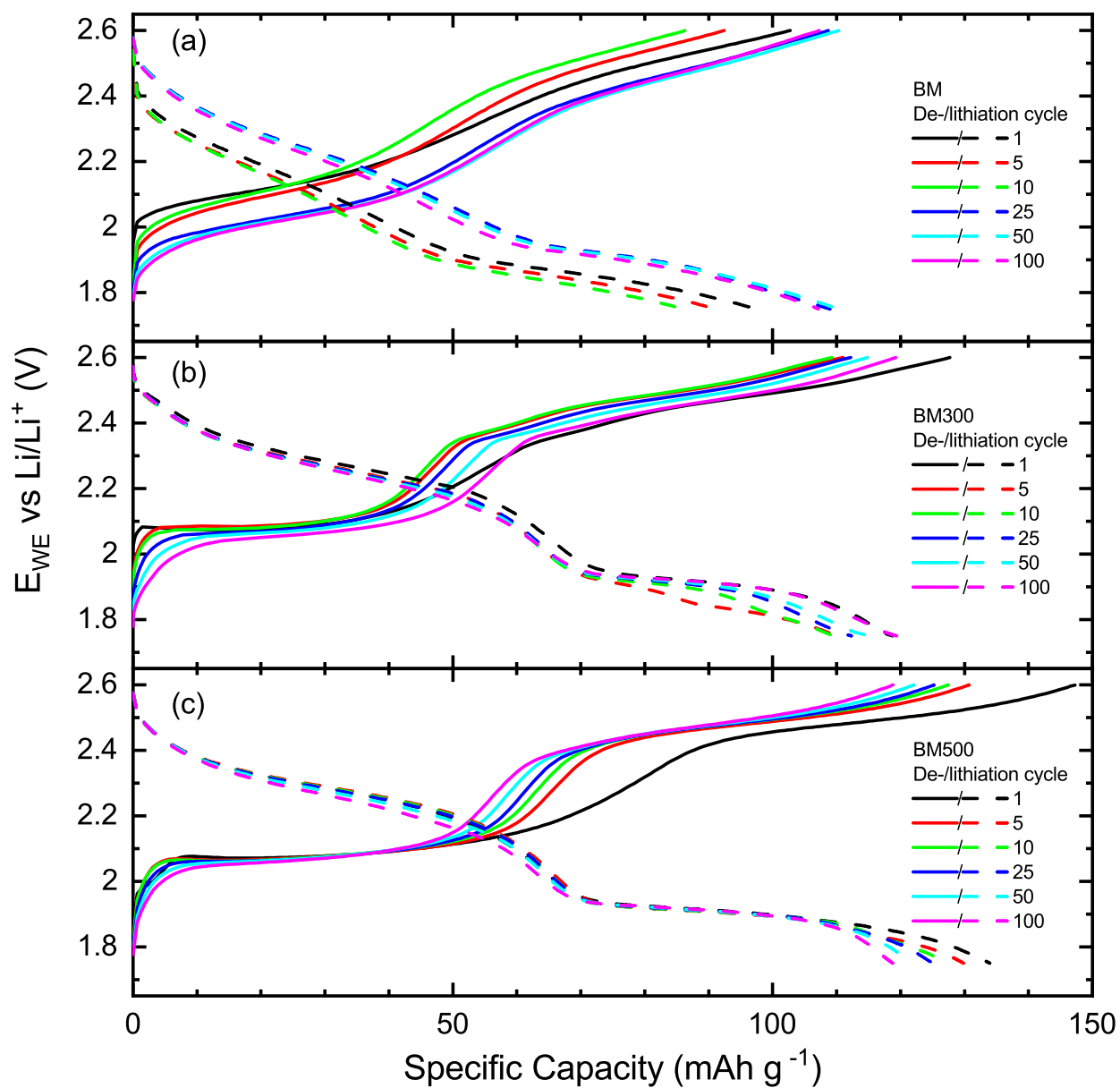


Figure S4 Potential profiles of BM (a), BM300 (b), BM500 (c) in the voltage range of 1.75 to 2.6 V.

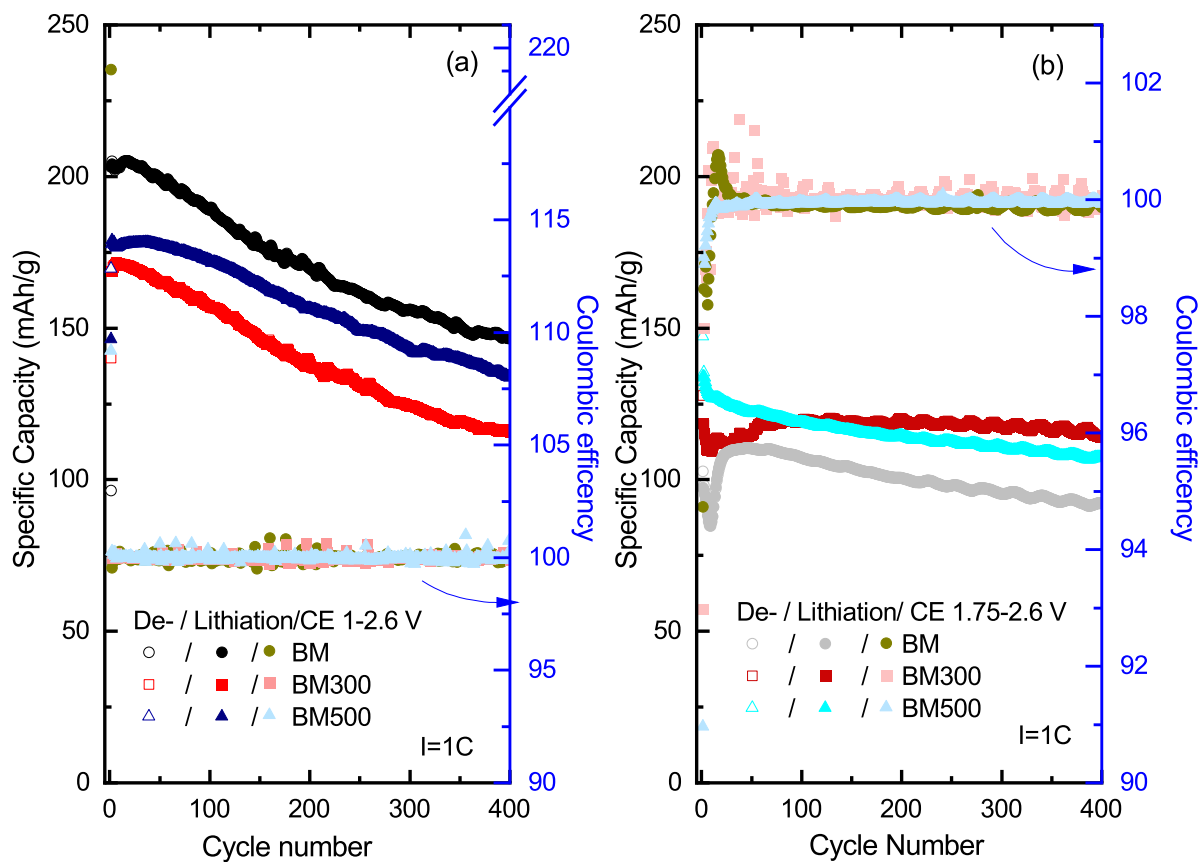


Figure S5 Specific charge/discharge capacities as well as Coulombic efficiency of BM, BM300 and BM500 electrodes at 1 C (a) in the voltage range 1 to 2.6 V and (b) 1.75 to 2.6 V.

References

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