Supplementary information:

Constructing metal-anode rechargeable batteries utilizing concomitant intercalation of Li-Mg dual cations into Mo₆S₈

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X-ray diffraction (XRD) results

Fig. S1 XRD profiles of Mo₆S₈ electrodes were measured after discharging in 0.5 M Li(TFSA)-0.5 M Mg(TFSA)₂/G3. The XRD profiles labeled “Discharged after stage 1” and “Discharged after stage 2” correspond to the ICP results shown in Fig. 4.
Energy dispersive X-ray spectrometry (EDX) analysis

Fig. S2 EDX results for Mo₆S₈ electrodes discharged in (a) 0.5 M Li(HMDS)-0.5 M Mg(HMDS)₂-0.5 M AlCl₃/G3 electrolyte and (b) 0.5 M Li(TFSA)-0.5 M Mg(TFSA)₂/G3 electrolyte are shown in (c) and (d), respectively. In the inset tables, the Cu element is also included as a reference, but actually Cu was not detected in the EDX analysis.