

## Supporting Information

### **Decaying leaves turn into energy: Empowering high-energy-density lithium-sulfur batteries**

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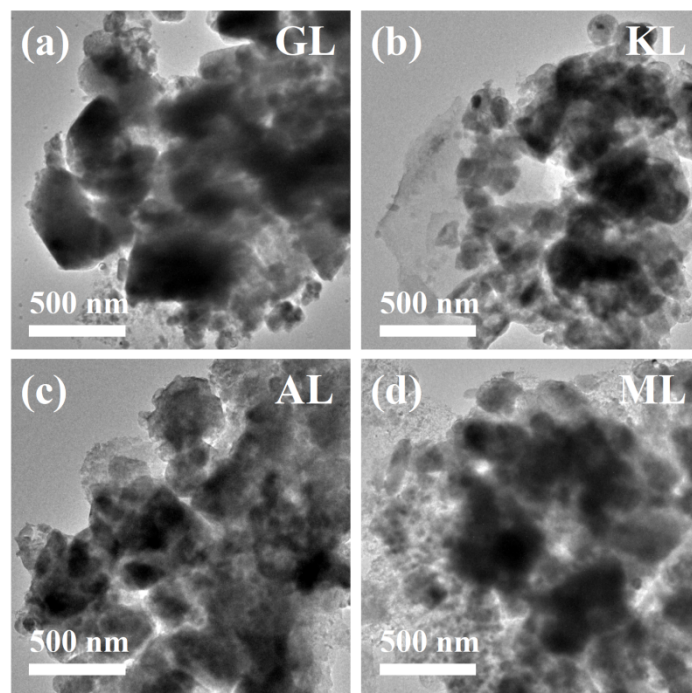
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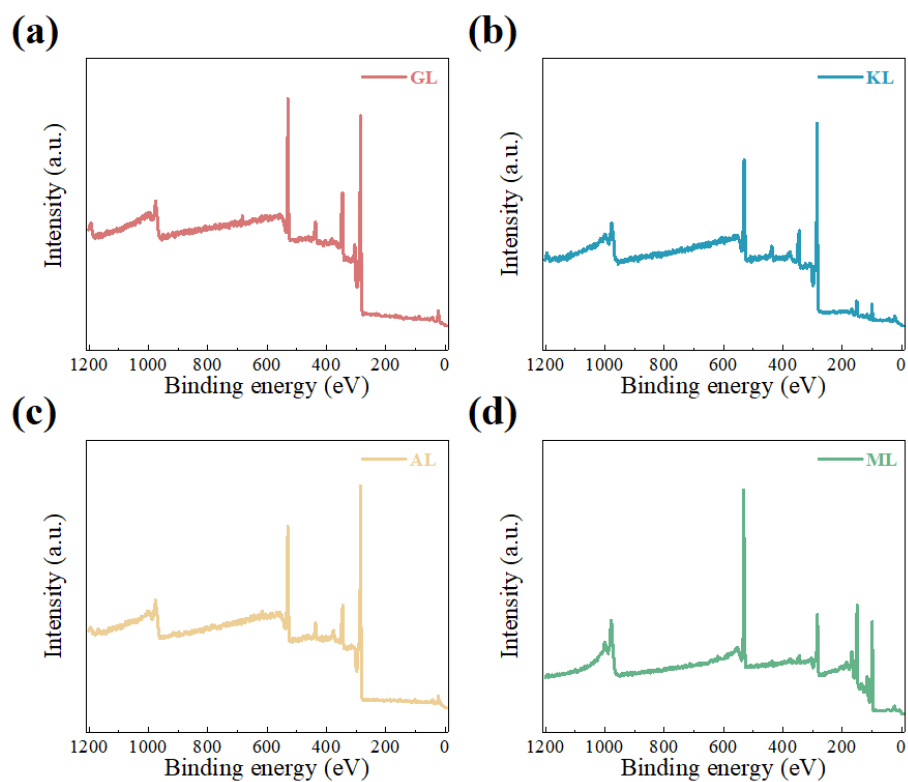
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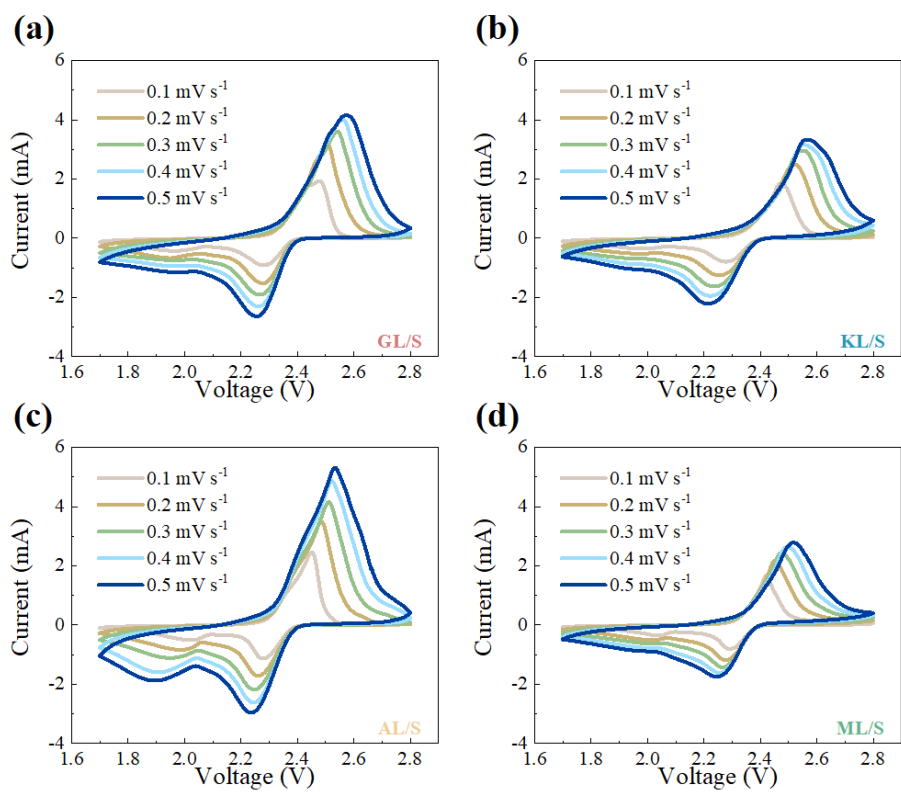
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**Fig. S1.** TEM images of (a) GL, (b) KL, (c) AL and (d) ML.



**Fig. S2.** The XPS spectrum of (a) GL, (b) KL, (c) AL and (d) ML.



**Fig. S3.** (a-d) CV curves of different cathodes at different scan rates.