

***Vanadium pentoxide interfacial layer enables high-performance all-  
solid-state thin film batteries***

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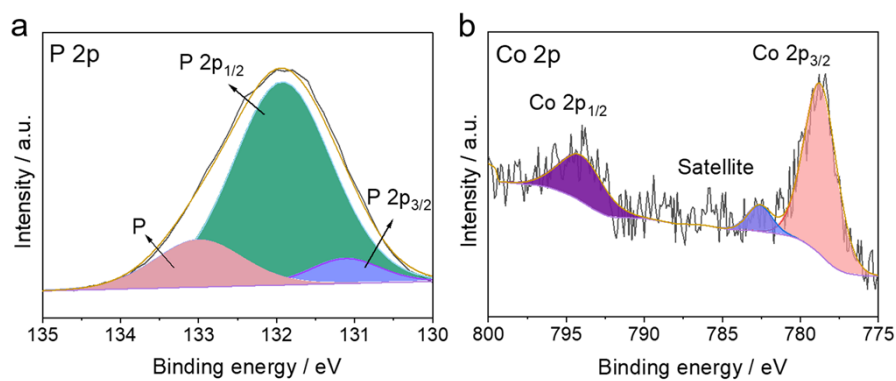
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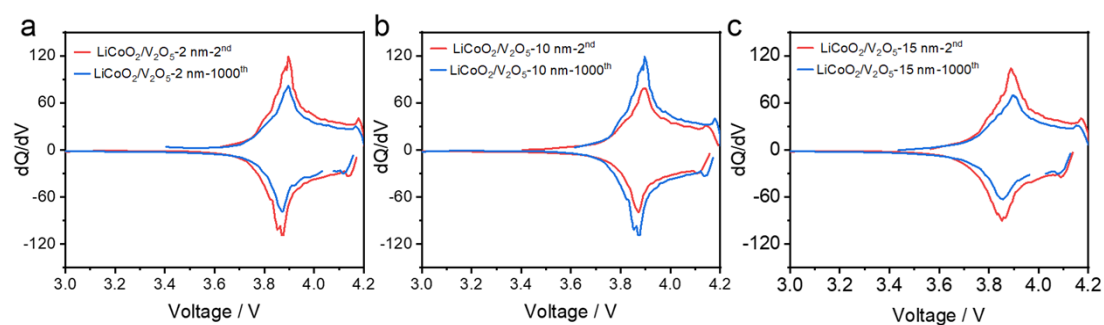
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**Figure S1.** High-resolution XPS spectra for elemental (a) P 2p and (b) Co 2p.



**Figure S2.** The differential capacity ( $dQ/dV$ ) versus voltage derived from the 2nd and 1000th charge-discharge curves of TFBS based on (a)  $\text{LiCoO}_2/\text{V}_2\text{O}_5$ -2 nm/LiPON/Li, (b)  $\text{LiCoO}_2/\text{V}_2\text{O}_5$ -10 nm/LiPON/Li and (c)  $\text{LiCoO}_2/\text{V}_2\text{O}_5$ -15 nm/LiPON/Li structures.