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Electronic Supplementary Information

Cyano-Bridged Coordination Polymer Gel as a Precursor to Nanoporous $\text{In}_2\text{O}_3\text{-Co}_3\text{O}_4$ Hybrid Network for High-Capacity and Cycle-Stable Lithium Storage

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[§] Equal contribution to this work.

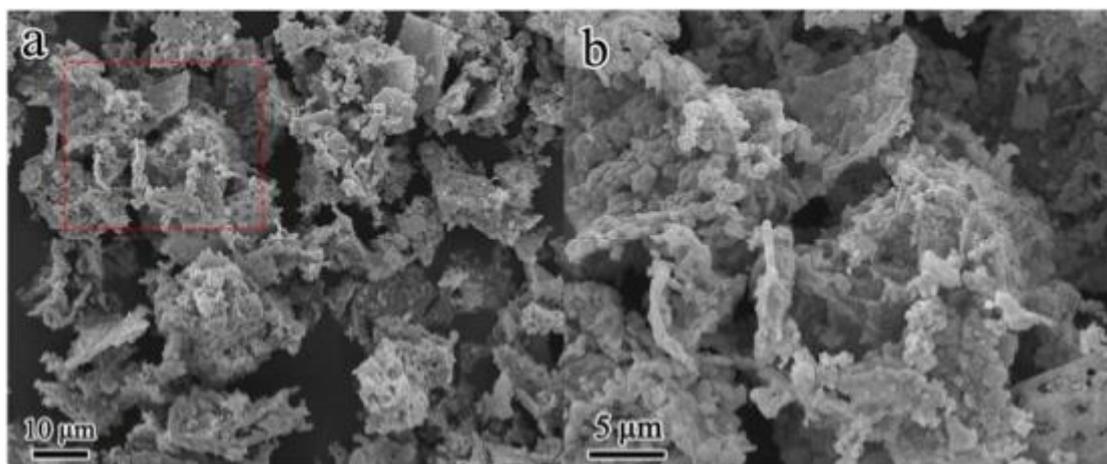


Fig. S1 SEM images of the nanoporous $\text{In}_2\text{O}_3\text{-Co}_3\text{O}_4$ hybrid network.

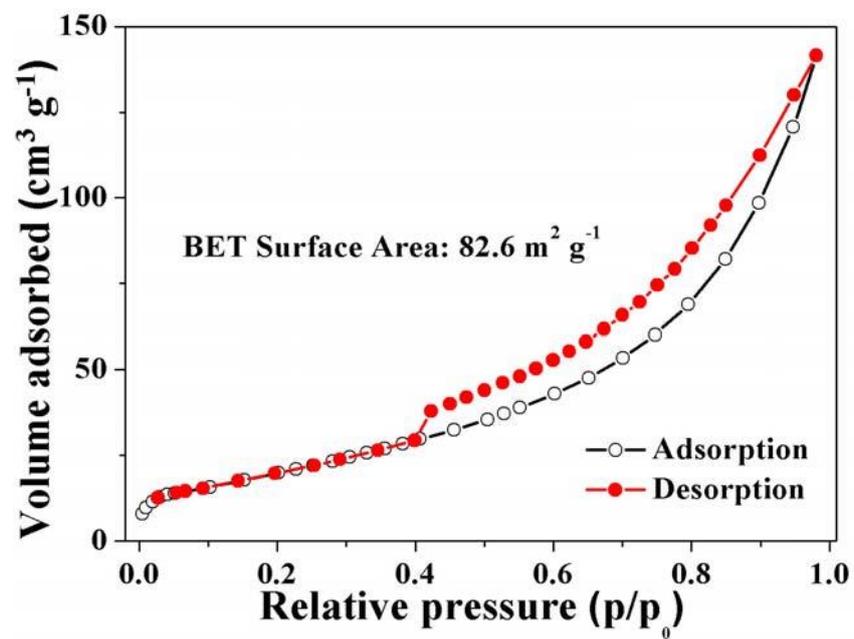


Fig. S2 Nitrogen adsorption/desorption isotherms of the nanoporous In₂O₃-Co₃O₄ hybrid network.

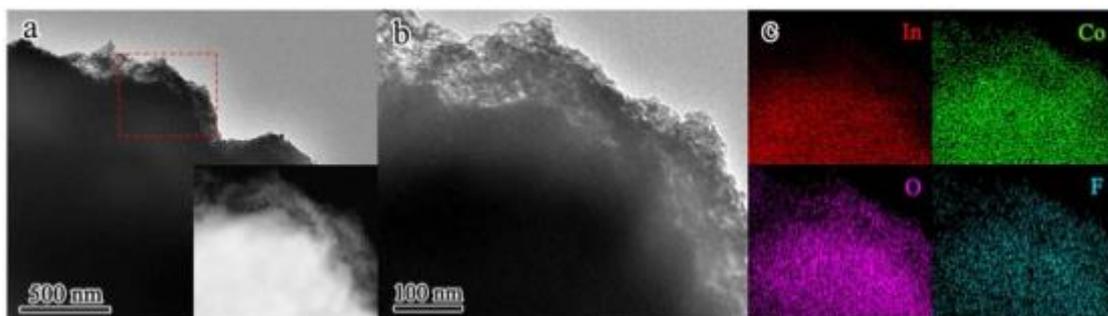


Fig. S3 Morphological and compositional characterization of the nanoporous $\text{In}_2\text{O}_3\text{-Co}_3\text{O}_4$ hybrid network in a fully delithiated state after 200 cycles: (a,b) TEM images and STEM image (inset), and (c) EDS elemental mappings of In (red), Co (green), O (purple), and F (cyan).

Fig. S3 displays the morphological and compositional characterization of the nanoporous $\text{In}_2\text{O}_3\text{-Co}_3\text{O}_4$ hybrid network in a fully delithiated state (3.0 V vs. Li^+/Li) after 200 cycles. As seen from the TEM images, the 3D porous structure is well preserved after repeated lithiation/de-lithiation processes, and the agglomeration and pulverization of hybrid oxide network can be effectively restrained during cycling (Fig. S3a and b). Also, the EDS elemental mappings reveal that the In, Co, and O signals are still uniformly distributed within the porous network, confirming the uniform distribution of indium, cobalt, and oxygen components in the delithiated product (Fig. S3c). Additionally, the homogeneous elemental signal of fluoride originates from the SEI layer on the anodic surface. These TEM and EDS elemental mapping results further demonstrate the excellent structural stability of the nanoporous $\text{In}_2\text{O}_3\text{-Co}_3\text{O}_4$ hybrid network, which plays a key role in its improved Li-storage performance especially cycling stability.