Electronic Supplementary Information (ESI)

The construction of sandwich structural Co₃O₄@C@PPy for improving pseudocapacitive storage

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Fig. S1 TEM images of (a-b) Co_3O_4 and (c-d) $Co_3O_4@C$.



Fig. S2 The Energy Dispersive X–ray Spectrum (EDX) is collected within a single nanowire of $Co_3O_4@C@PPy$.



Fig. S3 XPS survey spectra of Co₃O₄@C@PPy.



Fig. S4 CV profiles collected at different scan rates of (a) Co_3O_4 , (c) Co_3O_4 @C and (e) Co_3O_4 @C@PPy; Constant current charging-discharging curves collected at different current densities of (b) Co_3O_4 , (d) Co_3O_4 @C and (f) Co_3O_4 @C@PPy.



Fig.S5 Nyquist impedance profiles of the Co₃O₄, Co₃O₄@C and Co₃O₄@C@PPy.



Fig. S6 (a) CV profiles of AC electrode collected at various scan rates; (b) CV profiles of $Co_3O_4@C@PPy$ and AC electrode collected at a scan rate of 5 mV s⁻¹ in the potential ranges of -1.0-0 V and 0-0.6 V, respectively.



Fig. S7 CV curves of the ASC device with different upper potential limits.