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# Precursor-derived morphology controlling for mesoporous $Co_3O_4$ nanostructures towards supercapacitor application

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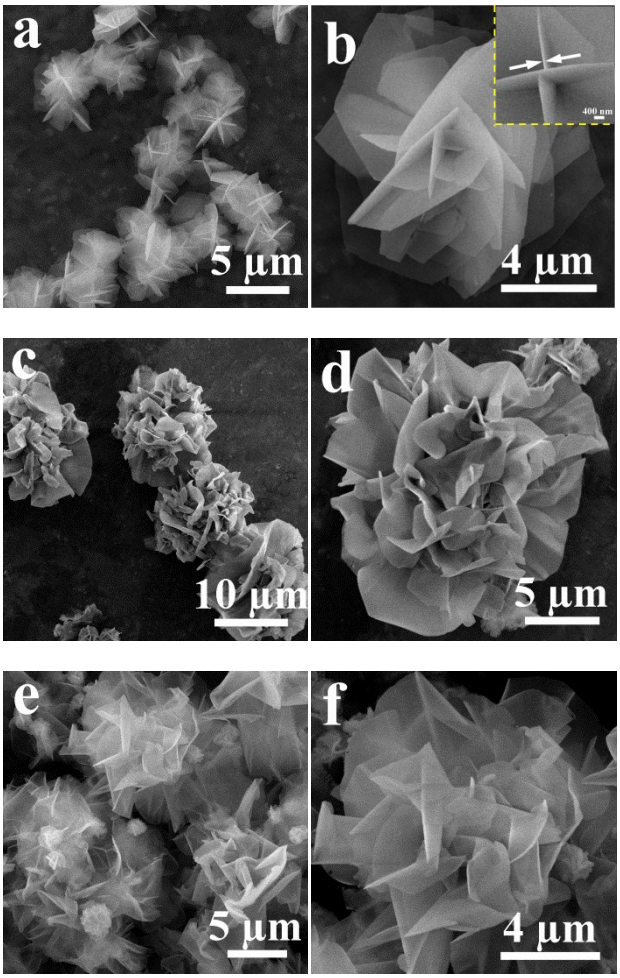


**Fig. S1** SEM images of precursors using different salts as morphology control agent. (a, b) KCl; (c, d) $Mg(NO_3)_2$); (e, f) without salt but excessive $Co(NO_3)_2$.

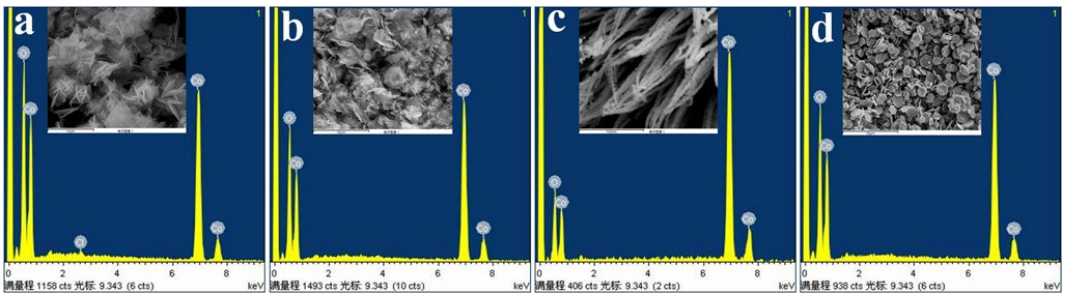


**Fig. S2** EDS mapping of samples (a) sample 1; (b) sample 2; (c) sample 12; (d) sample 13.

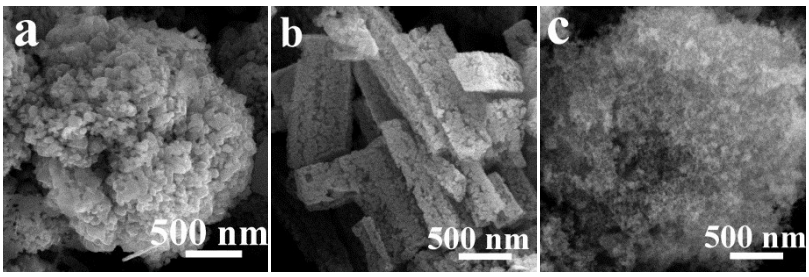


**Fig. S3** SEM images of $Co_3O_4$ synthesized at different conditions. (a) sample 10; (b) sample 4; (c) sample 5.

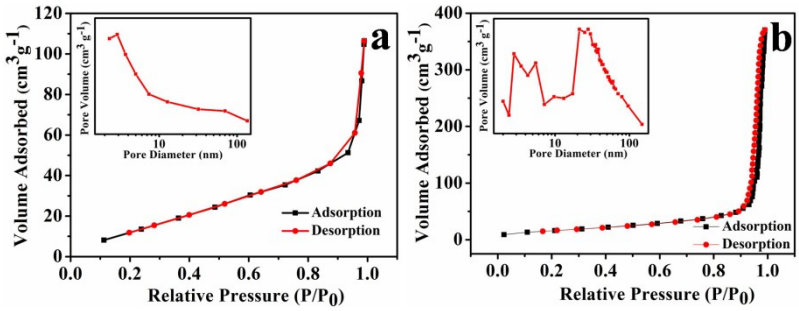


**Fig.** S4 Nitrogen adsorption–desorption isotherms of samples (a) sample 3; (b) sample 4. Inset in each isotherm is the corresponding pore size distributions.

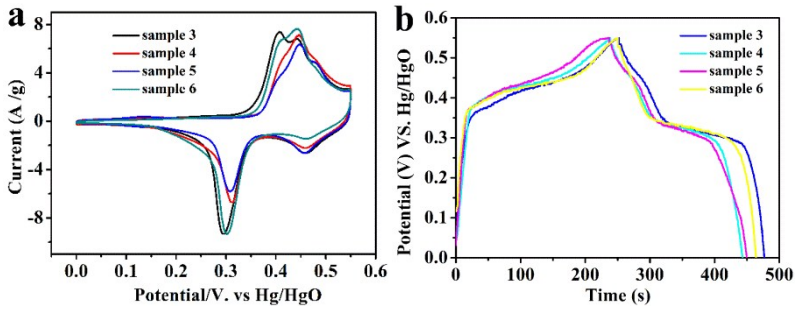


**Fig. S5** CV curves of (a) different samples at a scan rate of 10 mV $s^{-1}$; (b) GCD curves of different samples at 0.5 A $g^{-1}$.