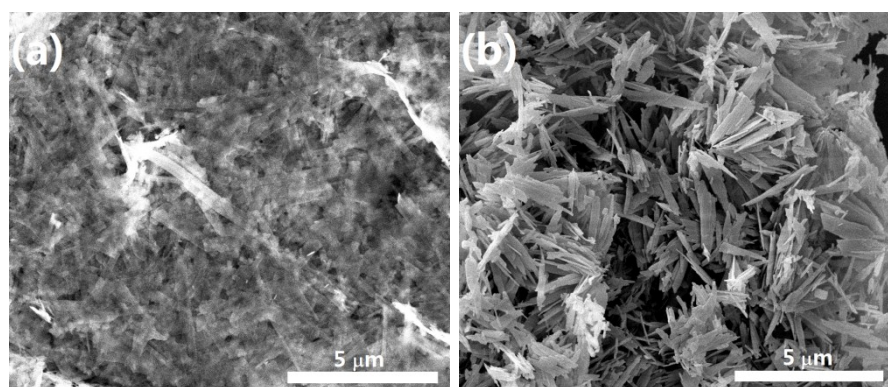


## Morphology evolution of Co phosphate and their electrochemical and photocatalytic performance

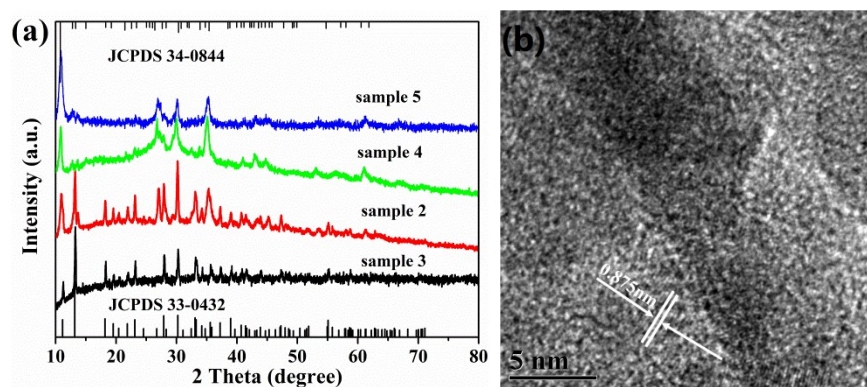
Juping Li,<sup>ab</sup> Lina Zhang,<sup>b</sup> Ping Yang,<sup>a</sup> and Xin Cheng<sup>ab\*</sup>

<sup>a</sup>School of Material Science and Engineering, University of Jinan, Jinan, 250022, PR China. E-mail: ujn\_chengxin@163.com.

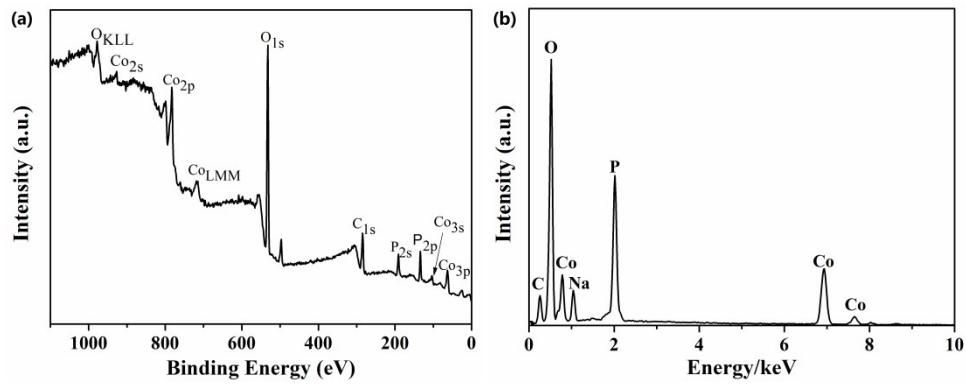
<sup>b</sup>Shandong Provincial Key Laboratory of Preparation and Measurement of Building Materials, Jinan, Shandong 250022, PR China.



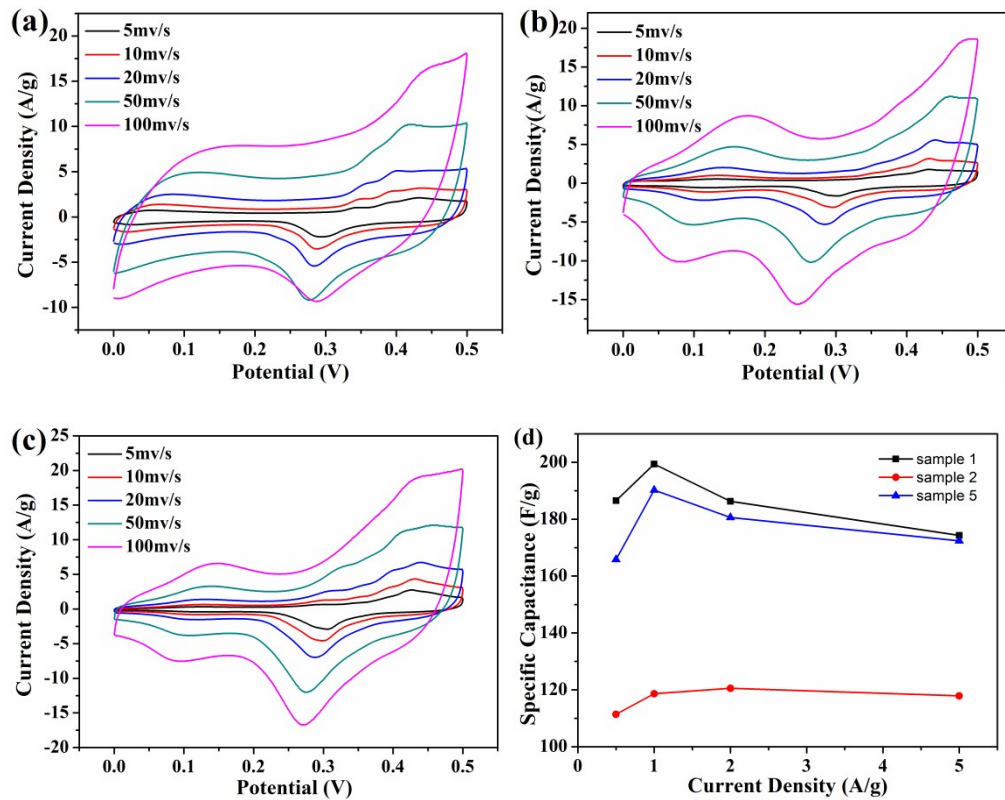
**Fig. S1** SEM images of Sample 2 ((a), 45 ml H<sub>2</sub>O, 5 ml ethanol) and Sample 4 ((b), 30 ml H<sub>2</sub>O, 20 ml ethanol).



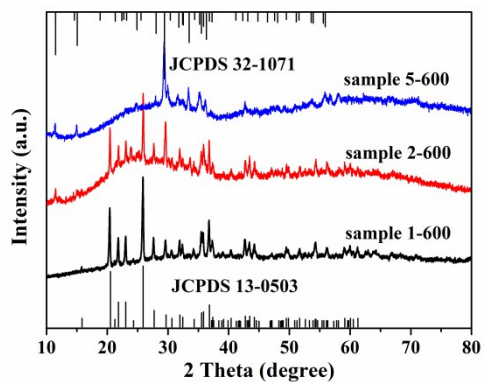
**Fig. S2** (a) XRD patterns of samples prepared with different solvents. (b) HRTEM images of sample 5.



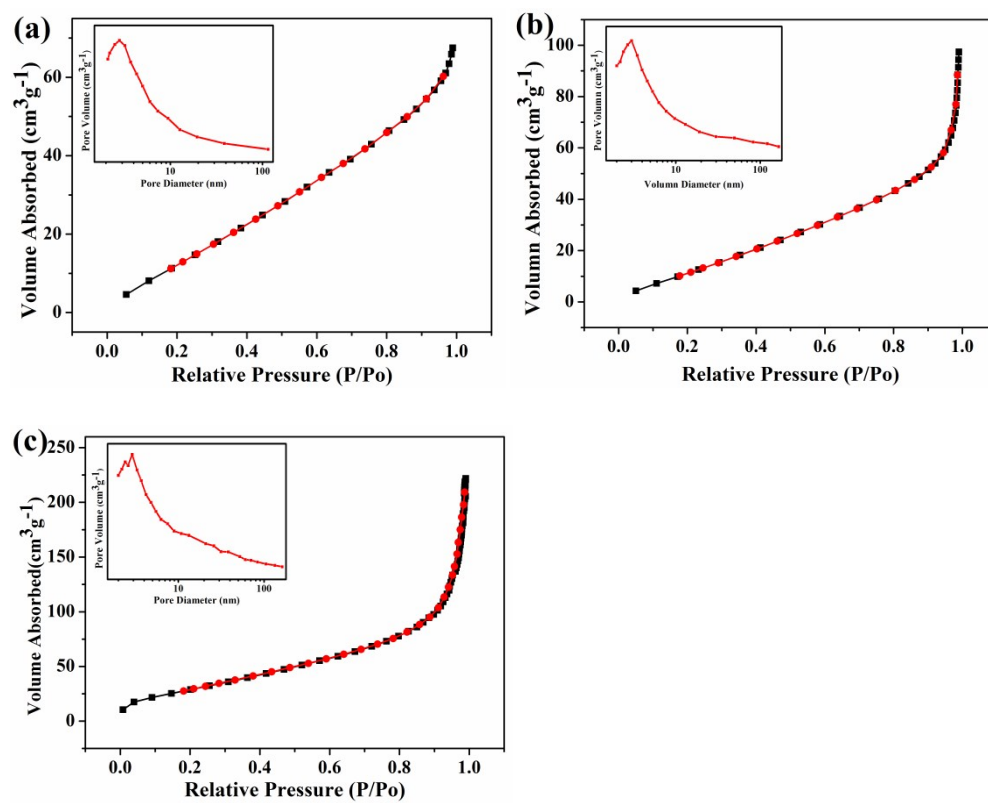
**Fig. S3** (a) XPS spectrum and (b) energy dispersive X-ray spectrum of sample 5.



**Fig. S4** CV curves of three samples with different morphology (a, sample 1; b, sample 2; c, sample 3) and (d) specific capacitance with current density



**Fig. S5** XRD patterns of sample 1, 2 and 5 after calcination (600 °C).



**Fig. S6** Nitrogen adsorption curves of three samples with different morphology. (a, sample 1; b, sample 2; c, sample 5)