

Supporting Information

Co-doped vanadium nitride/carbon composite fabricated from cobalt vanadium metal-organic frameworks precursor for supercapacitors

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1. Reagents and materials

Vanadium oxysulfate (VOSO_4), p-Phthalic acid (PTA), N, N-dimethylformamide (DMF), Cobalt sulfate (CoSO_4) was supplied by Aladdin Reagent Co, Ltd, potassium hydroxide (KOH), ethanol ($\text{C}_2\text{H}_6\text{O}$) and melamine ($\text{C}_3\text{H}_6\text{N}_6$) were purchased from Sinopharm Chemical Reagent Co, Ltd. All reagents and materials used in this study are analytically pure and can be used directly without further purification.

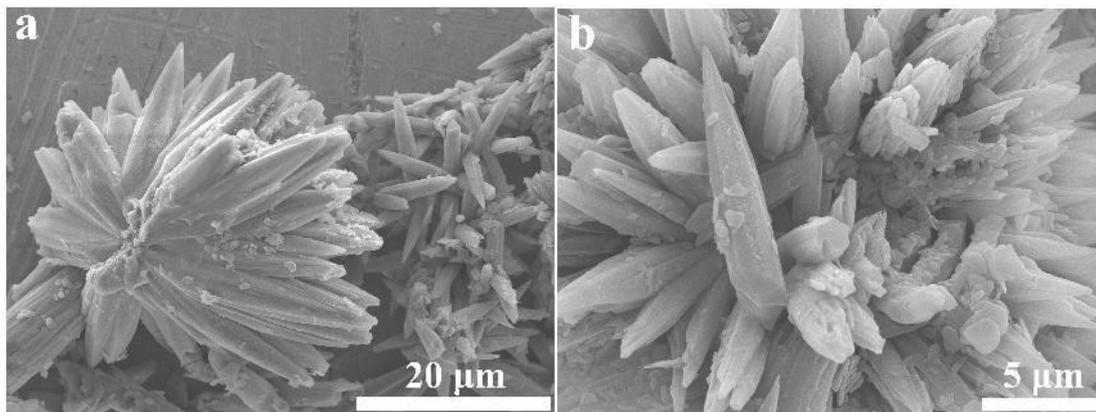


Fig. S1 (a, b) SEM images of V-MOF.

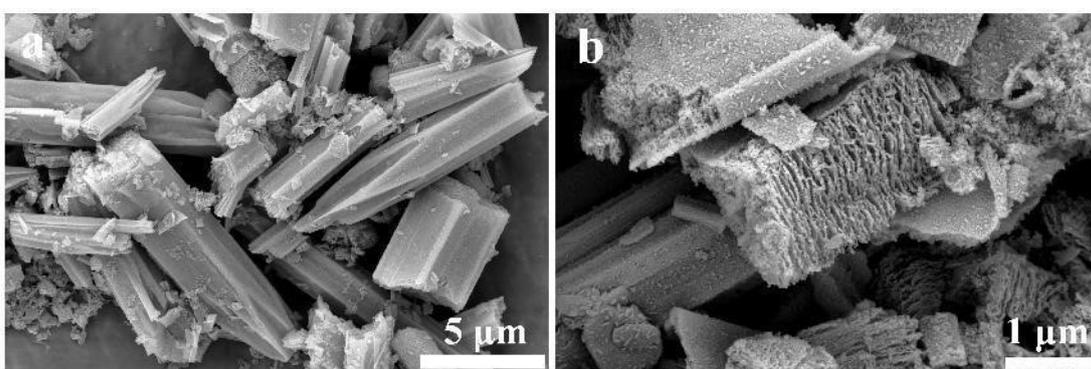


Fig. S2 (a, b) SEM images of C_V-MOF.

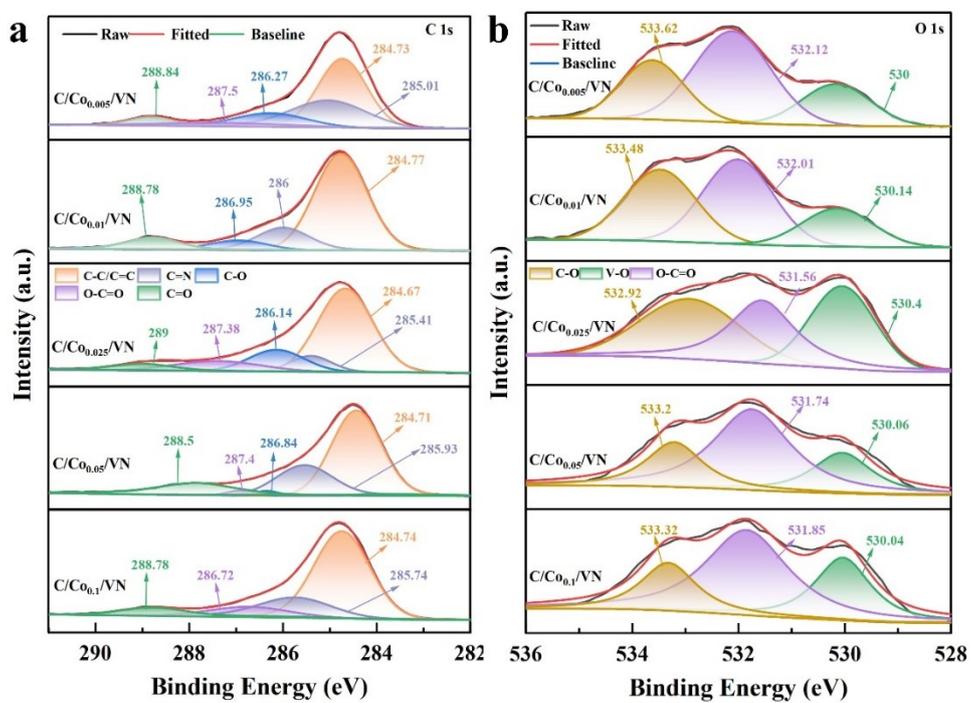


Fig. S3 XPS spectra of C/Co_x/VN: (a) C 1s, (b) O 1s.

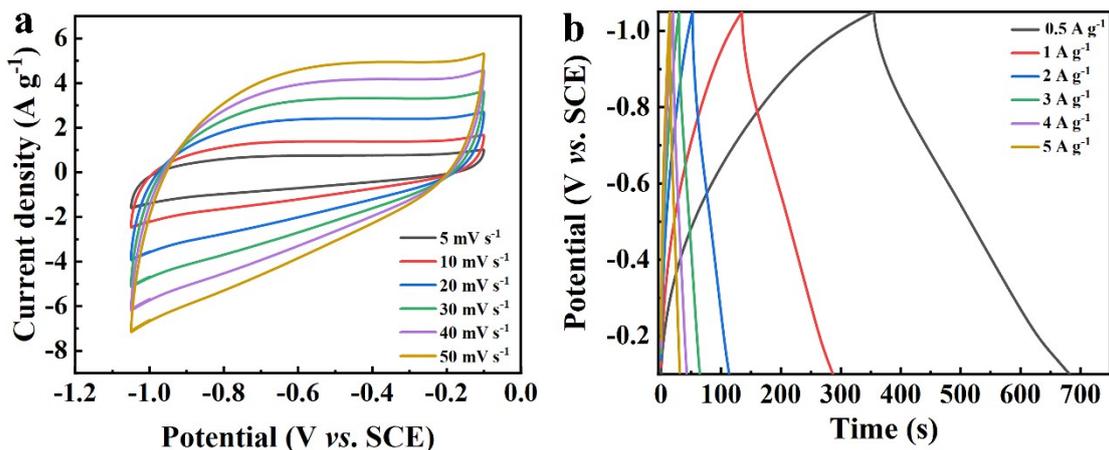


Fig. S4 Electrochemical properties of C/Co_{0.005}/VN: (a) CV curves at different scanning rates, (b) GCD curve at different current densities.

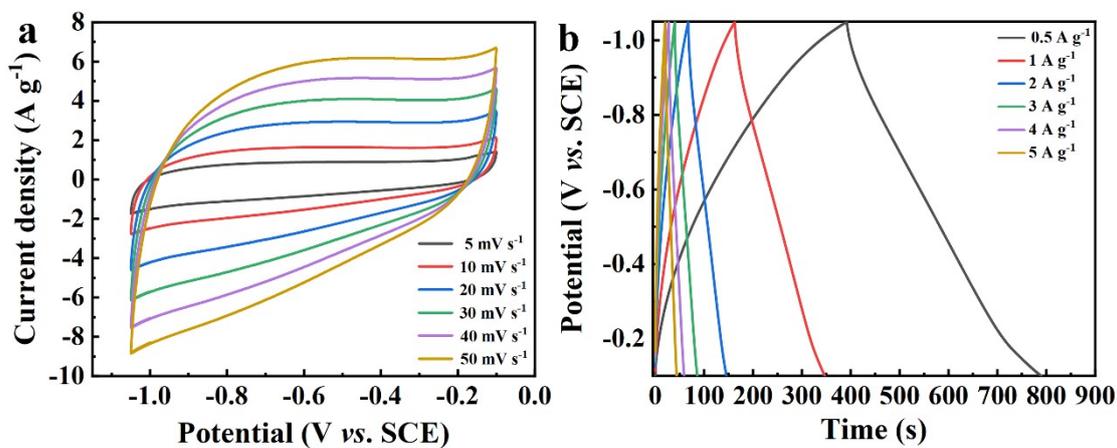


Fig. S5 Electrochemical properties of C/Co_{0.01}/VN: (a) CV curves at different scanning rates, (b) GCD curve at different current densities.

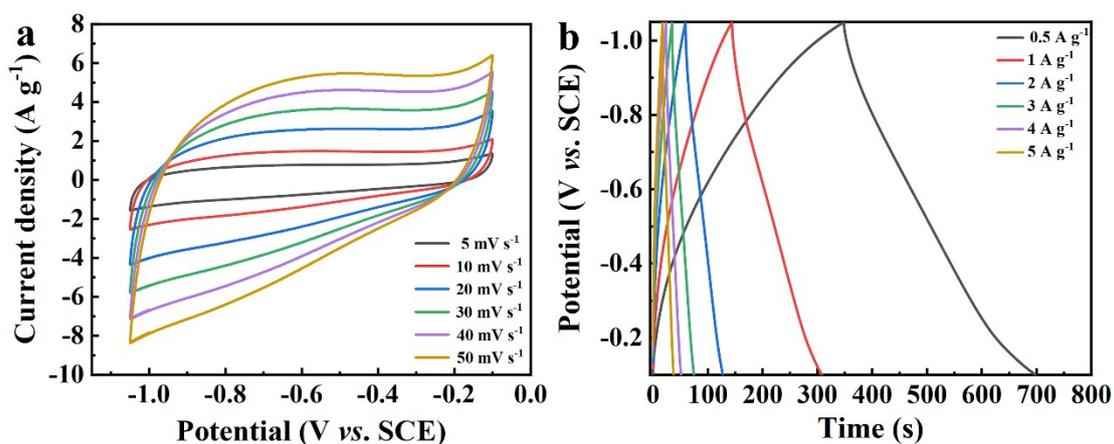


Fig. S6 Electrochemical properties of C/Co_{0.05}/VN: (a) CV curves at different scanning rates, (b) GCD curve at different current densities.

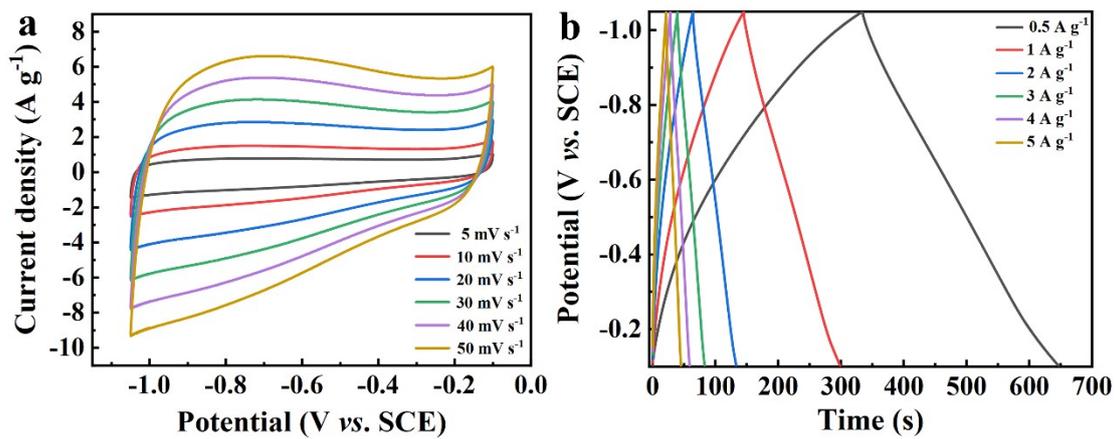


Fig. S7 Electrochemical properties of C/Co_{0.1}/VN: (a) CV curves at different scanning rates, (b) GCD curve at different current densities.

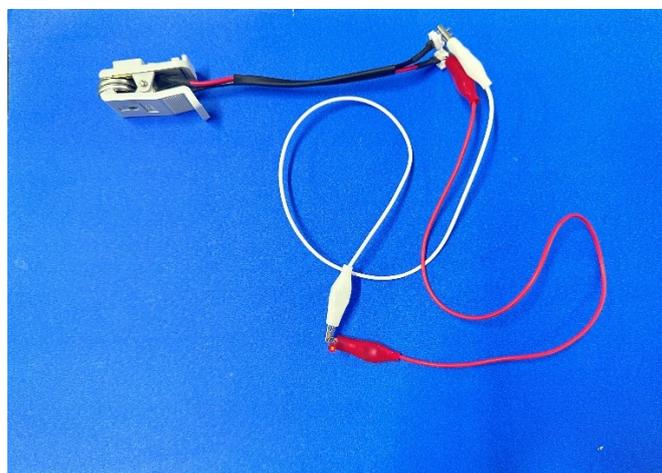


Fig. S8 Illustration of lighting up an LED using two-coin cells.