Supplementary Information

In situ hydrothermal synthesis of nickel cobalt sulfide nanoparticles embedded on nitrogen and sulfur dual doped graphene for high performance supercapacitor electrode

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The mechanism contribution for the NS-G/NCS sample is calculated form the relationship between the peak current of redox peak (i) and scan rate (ν) by following on equation:

$$i = k_1\nu + k_2\nu^{1/2}$$

As seen in figure S1, the fitted linear equation is $y = 0.6813x + 0.0573$. Thus, the slope of fitted linear is k_1 and k_2 is y-axis interception value. The term of calculated $k_2\nu^{1/2}$ is represented to ionic diffusion contribution and the term of $k_1\nu$ is referred to capacitive contribution.
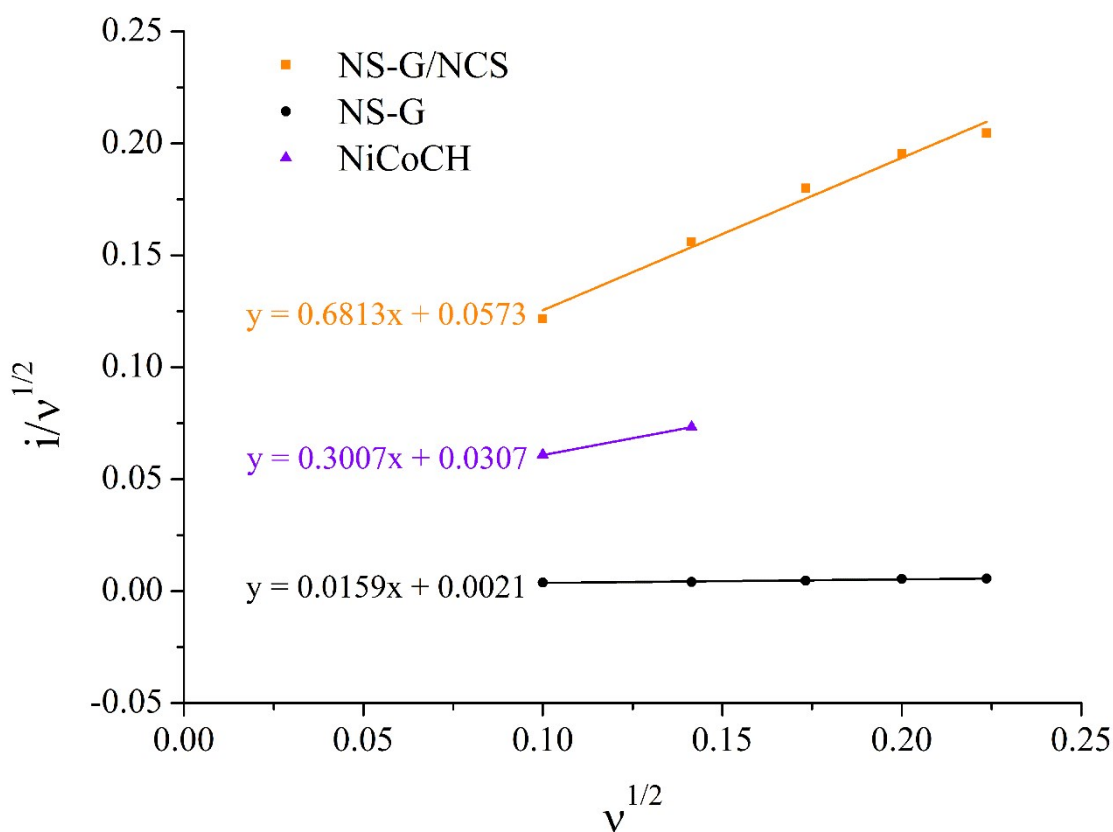

Fig. S1 The relationship plotting of NS-G, NiCoCH and NS-G/NCS electrodes.

The series of coin cells from the NS-G/NCS samples (four cells; 0.47 *4 = 1.88 V) are

connected with LED diode (1.6 V) as illustrated in Fig. S2.
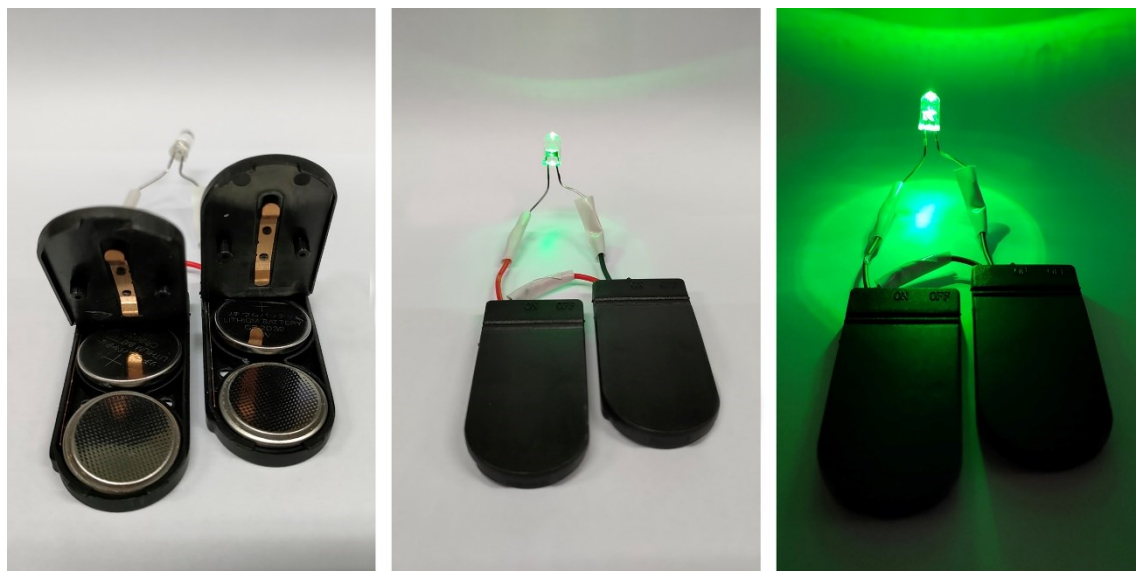

Fig. S2 The series of fourth coin cells from the NS-G/NCS samples.

The various ratios of NS-G to NCS samples were examined by CVs with different scan rate as shown in Fig. S3.
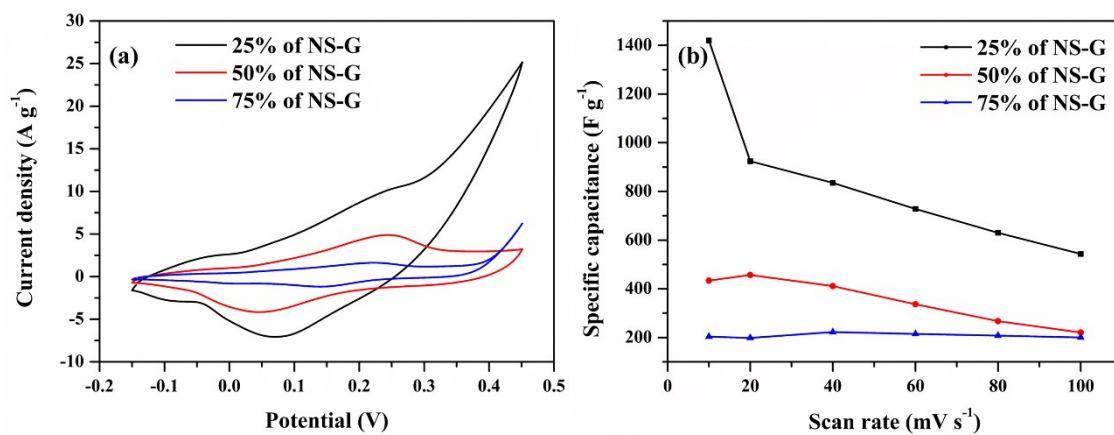

Fig. S3 The CV curves of various NS-G/NCS ratios (a) and the specific capacitance at different scan rate of various NS-G/NCS ratios (b).