

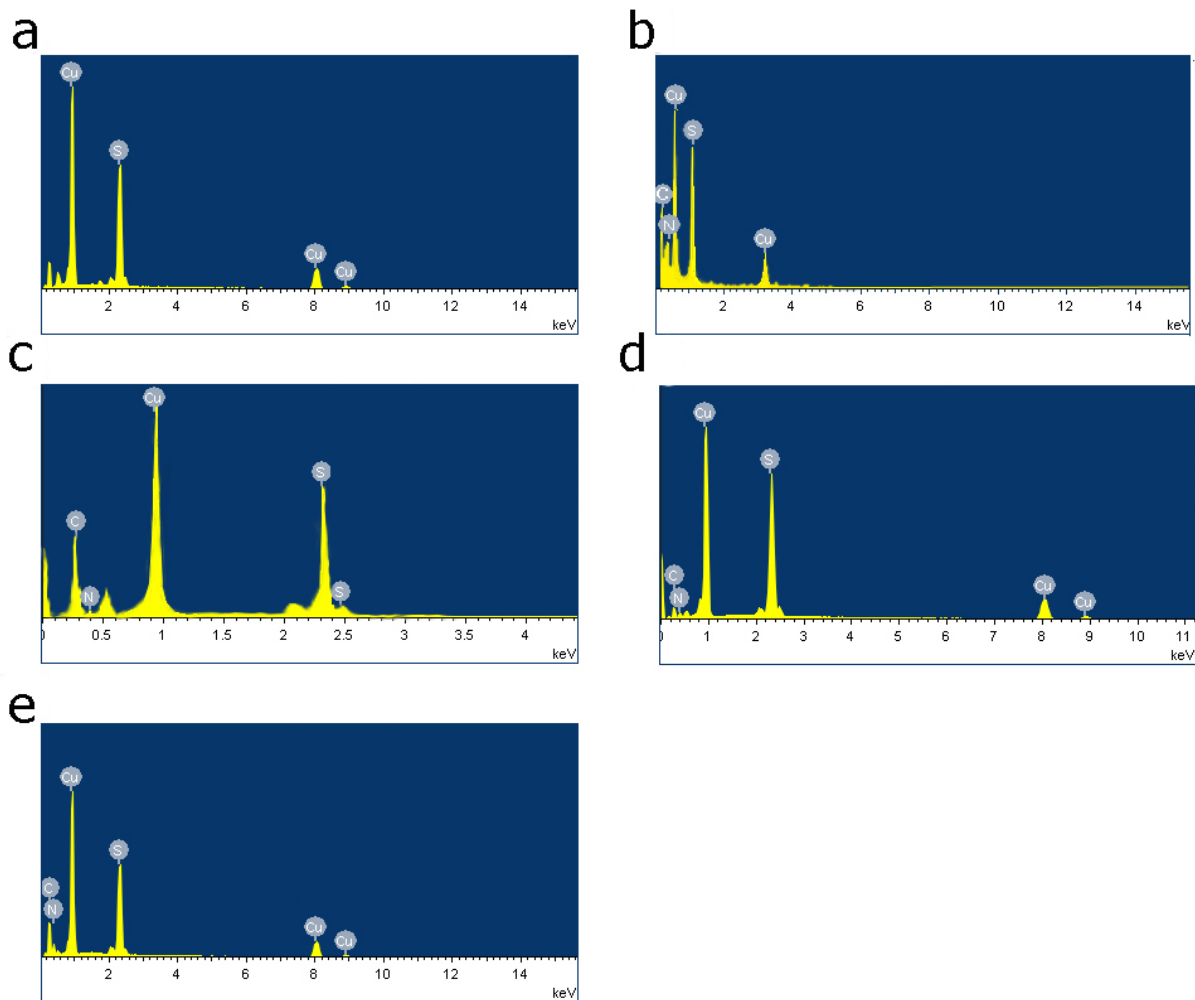
Supporting information for
Facile synthesis of hierarchical CuS/CuSCN nanocomposite with
advanced energy storage properties

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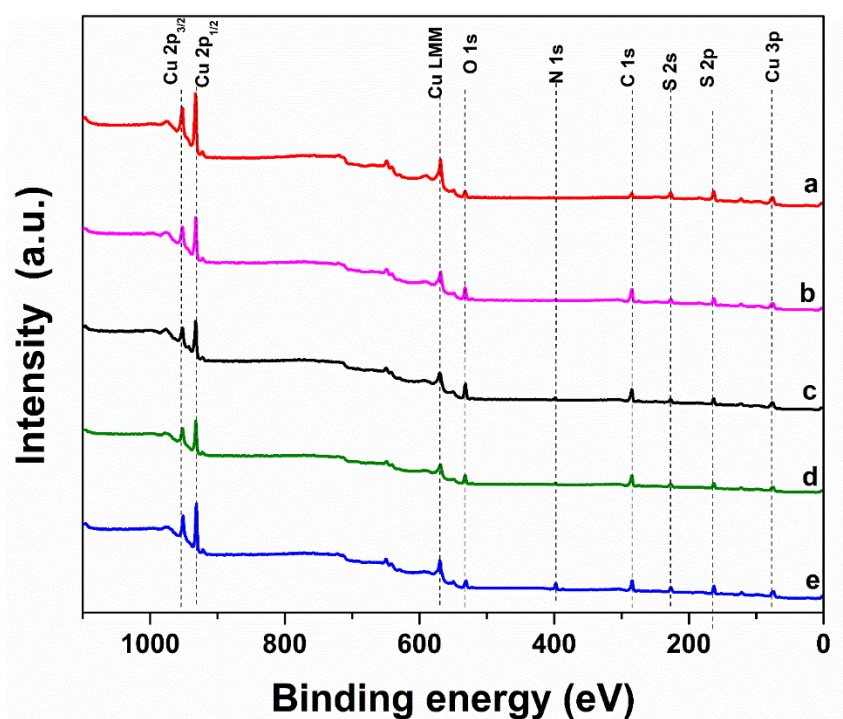
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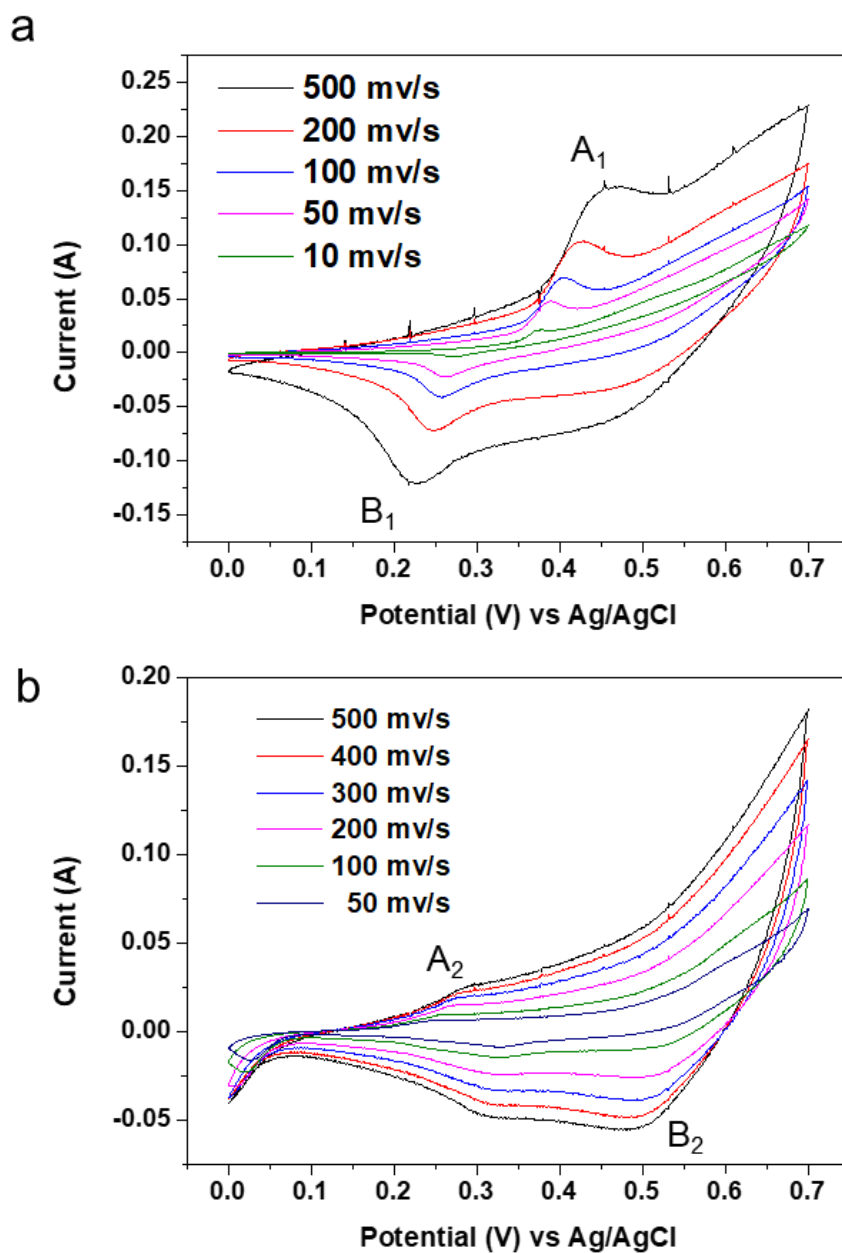
Supporting Figure S1: EDX graphs for (a) CuS, nanocomposite of CuS/CuSCN (b) 3:1, (c) 1:1, (d) 1:3 and (e) pure CuSCN

These EDX spectrums shown the qualitative data confirms the presence of Cu, S, N and C.

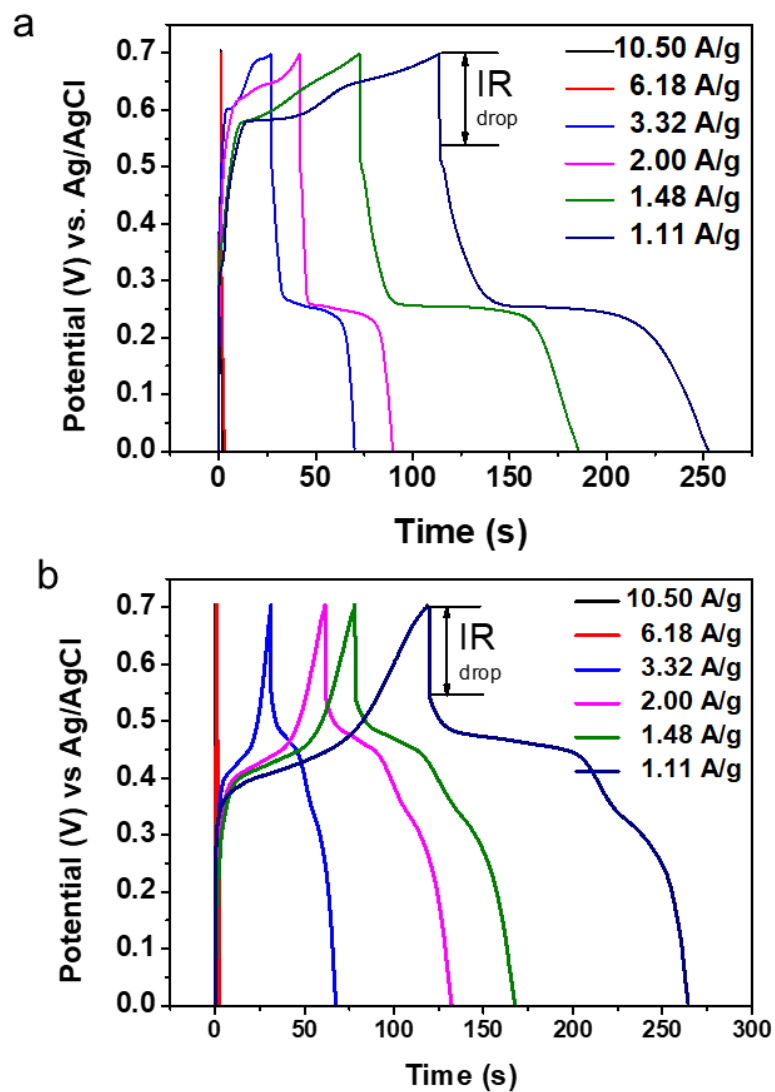


Supporting Figure S2: Survey spectrum for XPS data for (a) CuS, nanocomposite of CuS/CuSCN (b) 3:1, (c) 1:1, (d) 1:3 and (e) CuSCN

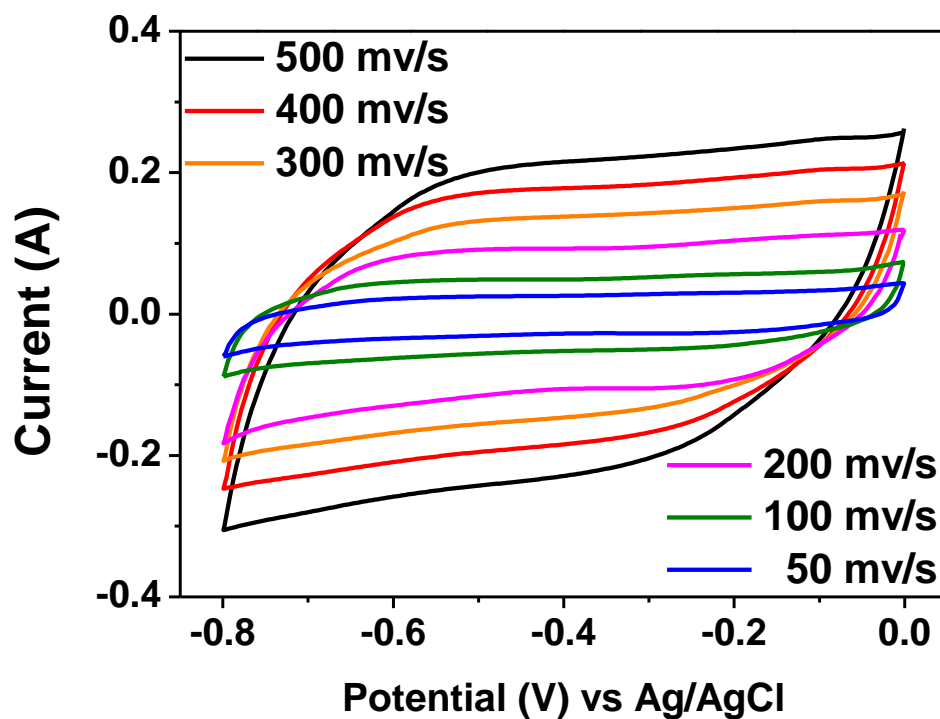
The elemental compositions of CuS, CuSCN and their nanocomposites further analysed by the XPS measurements. This XPS survey spectrum depicted the signals of the presence of Cu, S, N and C elements as well as O element. The peaks of O may come from H₂O vapor from the atmosphere, O₂ or absorbed CO₂ in the surface of the sample. **a**, The N 1s peak is disappeared in CuS and gradually appeared with increasing the peak intensity within CuSCN concentration, clearly depicted in Fig 3.



Supporting Figure S3: Cyclic voltammogram of pure CuS and CuSCN electrodes with different scan rates. (a) The cathodic current peak (A₁) and anodic peak (B₁) for pure CuS electrode. (b) The cathodic current peak (A₂) and anodic peak (B₂) for CuSCN electrode.



Supporting Figure S4: Galvanostatic charge-discharge curve of pure CuS electrode (a) and CuSCN electrode (b) with different current densities.



Supporting Figure S5: Cyclic voltammogram of activated carbon (AC) electrode with different scan rates