Fig. S1 XRD patterns of Cu$_{2-x}$Se nanosheets synthesized through a solvothermal process in a different volume ratio of ethylene glycol/water (R), (a) $R = 0/30$, (b) $R = 5/25$, (c) $R = 15/15$, (d) $R = 20/10$, (e) $R = 25/5$, (f) $R = 30/0$

Fig. S2 Charge-discharge capacity, and Coulombic efficiency of Cu$_{2-x}$Se nanosheets at a current density of 50 mA g$^{-1}$ with a voltage window of 0.01 V-3 V.
Fig. S3 charge–discharge curve of Cu$_{2+}$Se nanosheets measured at a current density of (a) 100 mA g$^{-1}$, (b) 200 mA g$^{-1}$. 