Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supplementary Information

Superior supercapacitive performance in electrospun copper oxide nanowire electrodes

BaijuVidhyadharan,[1] IzanIzwanMisnon,[1] RadhiyahAbd Aziz,[1] K. P. Padmasree,[2] Mashitah M. Yusoff,[1] Rajan Jose[1]*

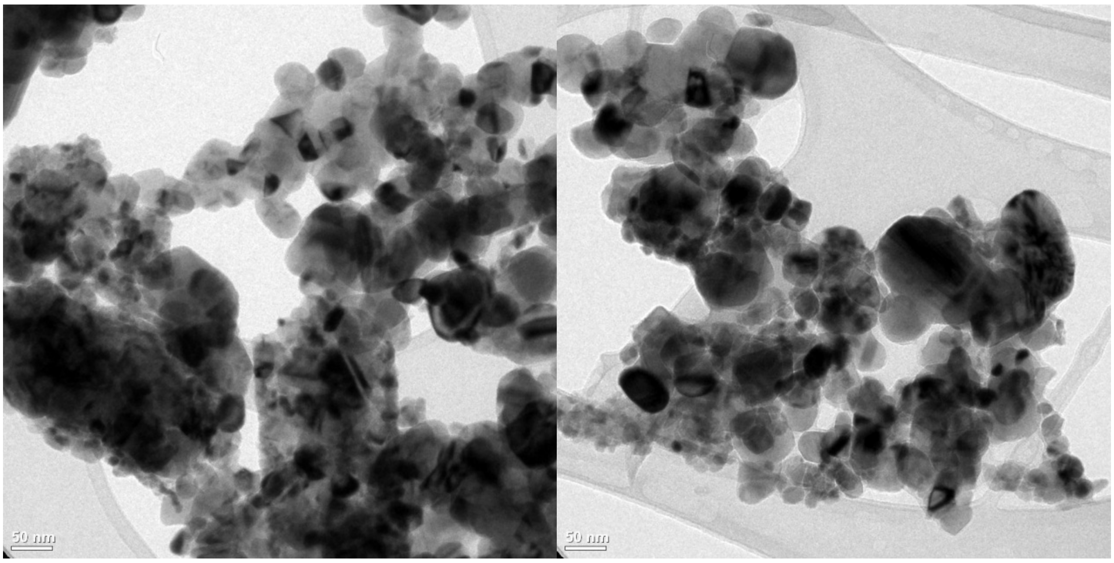
[1]Nanostructured Renewable Energy Materials Laboratory, Faculty of Industrial Sciences & Technology;[2]CINVESTAV, Unidad Saltillo, Carr. Saltillo - Monterrey km 13.5, C.P. 25900, Mexico; *E-mail: rjose@ump.edu.my

S1: Theoretical specific capacitance of CuO

$$C = \frac{F}{\Delta EXm} = \frac{96485}{79.5 \times 0.68} = 1783\ F/g$$

In the above equation, *F* is the Faraday constant; *ΔE* is the potential window and *m* is the molecular weight.

S2a. Bright field transmission electron micrographs of CuO nanowires



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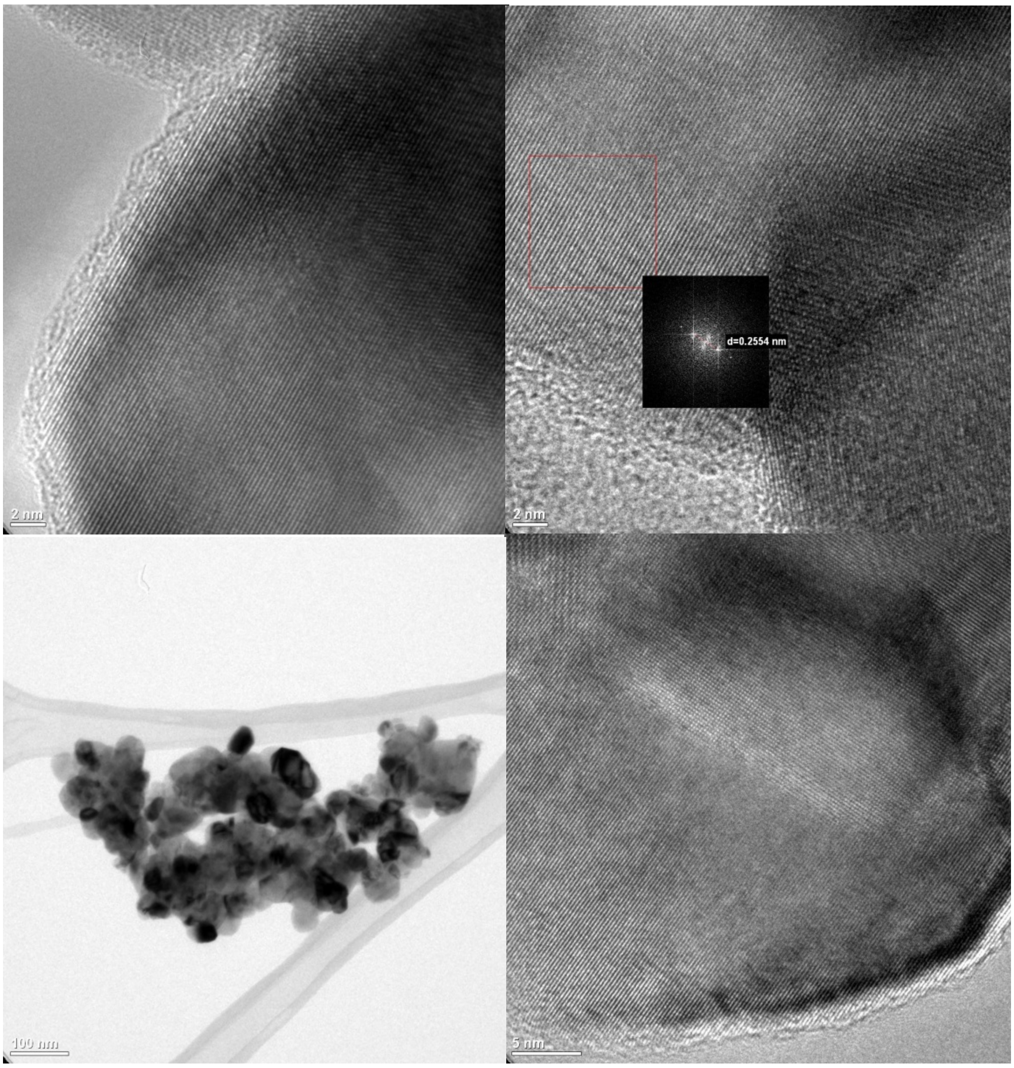
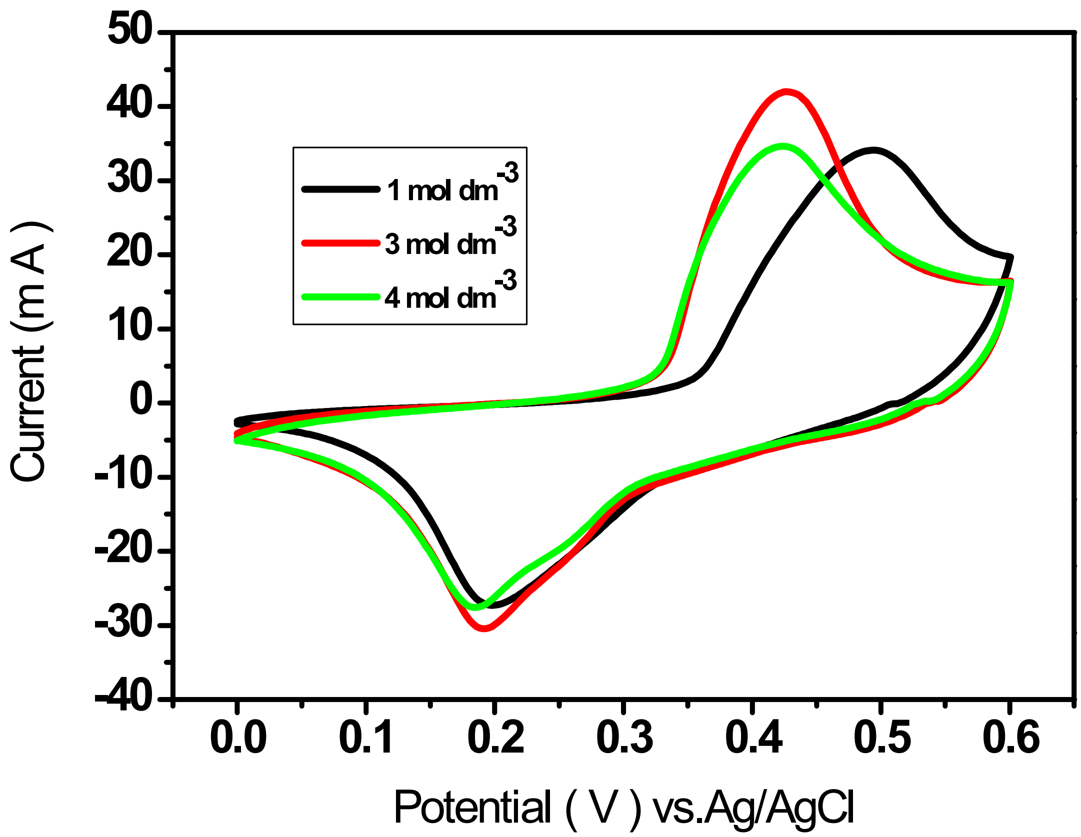
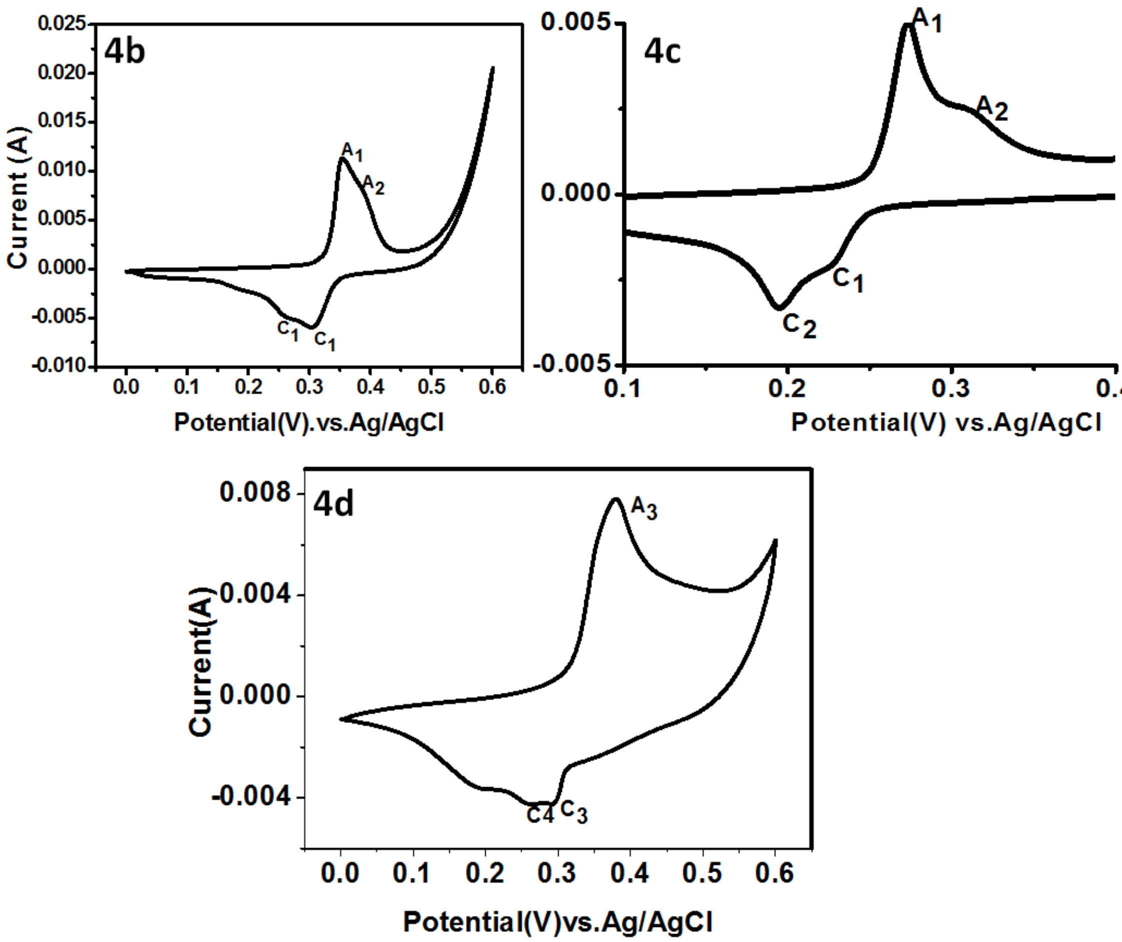
S2b. High resolution lattice images of CuO nanowire



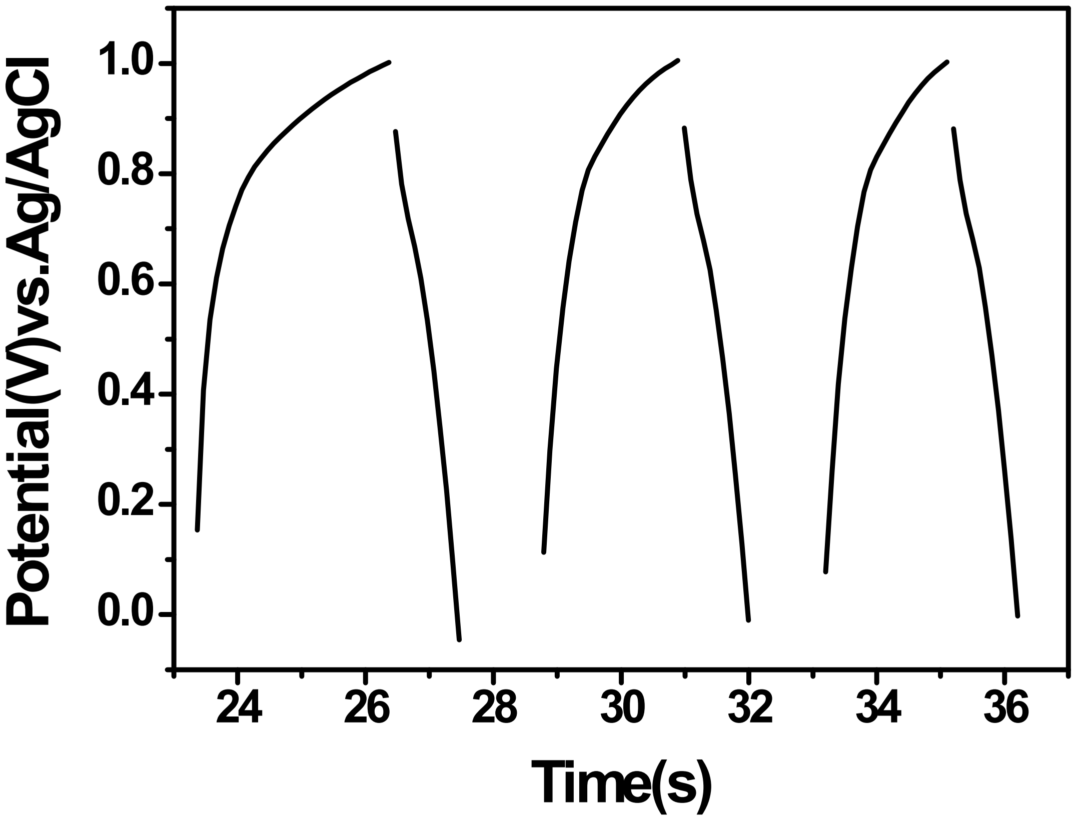
S3.Cyclic voltammograms of the CuO nanowires electrodes at varying concentration of LiOH solution at a scan rate of 10 mV/s to optimize the electrolyte concentration for charge – discharge – cycling. The data shows that 3M LiOH would show high supercapacitive performance



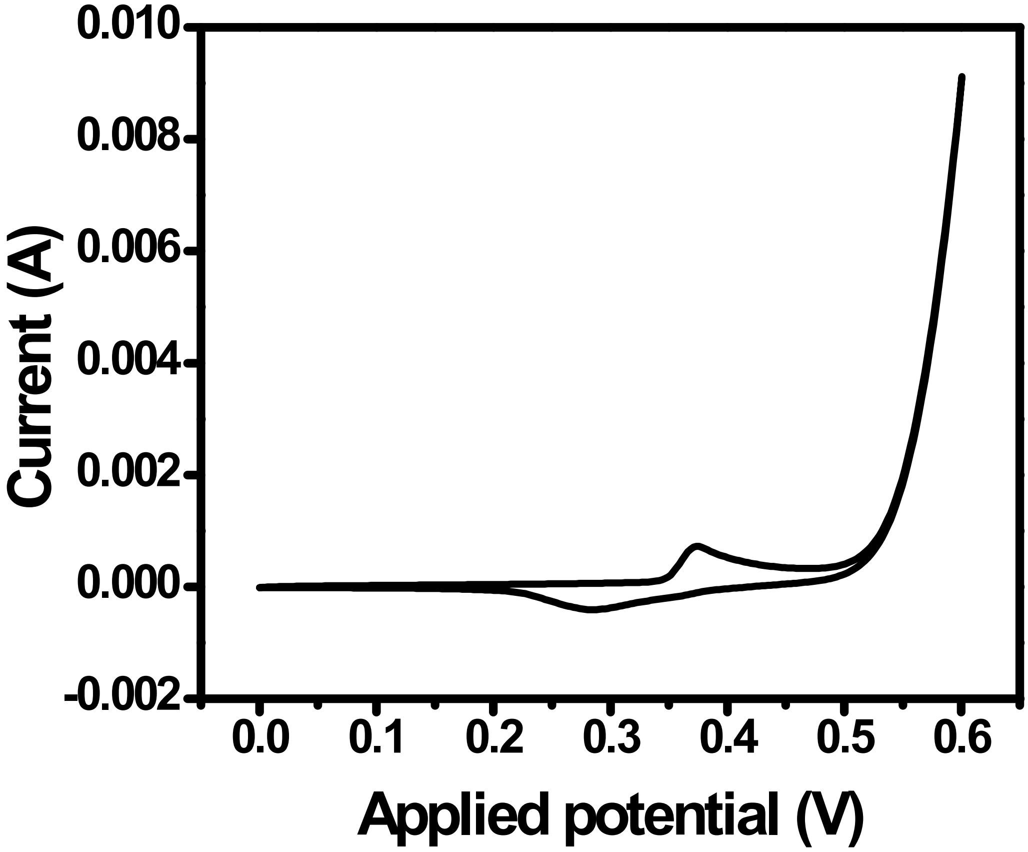
S4. Cyclic voltammograms of CuO nanowire electrode in 3 M KOH(4b),6 M KOH(4c) and in 3 m LiOH(4d) at scan rate 2mV/s drawn to clearly see the electrochemical events described in the Figure 4 of the main article.



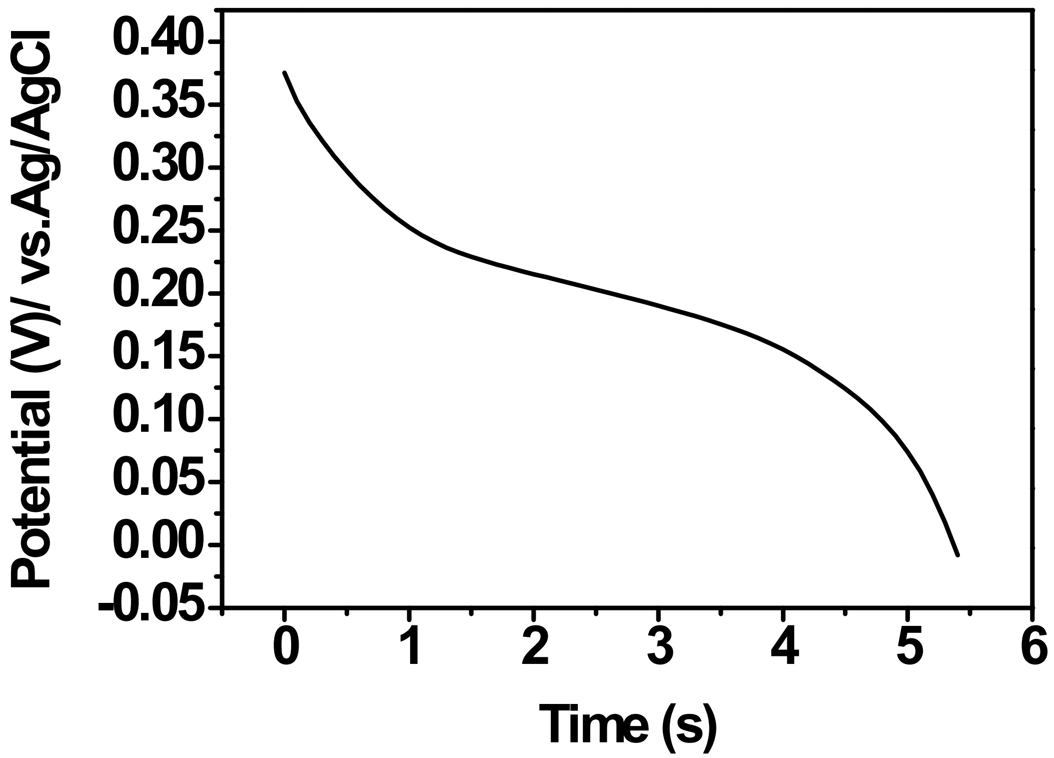
S5.Galvansotstic Charge discharge Curves in 1M Na_2SO_4at a current density 10 A/g



S6. Cyclic Voltammetry of the Ni foam substrate in 6M KOH aqueous electrolyte at a scan rate 5mVs^{-1}.Oxidation of the nickel foam is negligibly small.



S7.Discharge curve of the Ni foam substrate in 6 M KOH indicating that the discharge time is much lower (5 s) compared with that including the CuO nanowires (127 s). Area of the substrate was ~1 cm^2 similar to that of the CuO nanowire electrode



S8: Panels a, b, and c shows the cycling stability and Coulombic efficiency in the respective electrolytes. Panel "d" shows the variation in the internal resistance of the CuO electrode in various electrolytes noted in the figure labels.