Highly stable symmetric supercapacitor from cysteamine functionalized multi-walled carbon nanotubes operating in a wide potential window

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ABSTRACT

In this paper, the functionalized multi-walled carbon nanotubes with thiol group (MWCNTs-SH) were used to fabricate a symmetric supercapacitor. The symmetric supercapacitor shows a superior electrochemical performance under a wide range of operating voltage up to 2 V and gives a specific capacitance of 85.3 F g-1 at 0.25 A g-1 (2 V) in 1 M Na2SO4. In addition, the supercapacitor shows high energy density of 11.9 Wh kg-1. The findings reveal that this functionalized material is a good candidate for supercapacitor electrode materials.

KEYWORDS

Cysteamine; EDLC; Functionalization; MWCNTs; Supercapacitors.

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