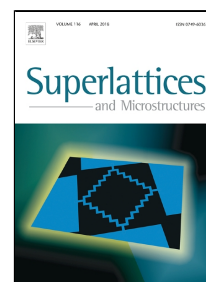


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Electrochemical characteristics of flexible micro supercapacitors with reduced graphene oxide-carbon nanotubes composite electrodes

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Abstract

In this study, we fabricate solid-state flexible micro-supercapacitors (MSCs) with reduced graphene oxide-carbon nanotube (rGO-CNT) composite electrodes and investigate the electrochemical characteristics by comparing with those of an MSC with rGO electrodes. Regarding the resistance-capacitance time constant and IR drop, the addition of CNTs into the rGO electrodes shows a significant effect owing to both the decrease in the resistance and the increase in the permeability of the electrolytes. Compared to the rGO MSCs, the rGO-CNT MSCs show an excellent areal capacitance of 2.6 mF/cm², a smaller IR drop of 11 mV, a lower RC time constant of 6 ms, and faster charging/discharging rates with a high scan rate ability up to 100 V/s. The mechanical stability of the flexible rGO-CNT MSCs is

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