عنوان مقاله:

Basic charge storage mechanism of cobalt sulfide electrode material for supercapacitor

محل انتشار:

بیستمین کنگره شیمی ایران (سال: 1397)

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خلاصه مقاله:

Recently, since supercapacitors have received considerable attention, a large number of studies have been developed to create efficient electrodes to respond to ever-increasing demands of supercapacitors. The boundary between the electrochemical capacitors and batteries is less pronounced. The similar material may exhibit capacitor battery-like behavior depending on the charge storage guest ions and the electrode design. In this work a system containing cobalt sulfide (CoS) electrodes and KOH (6 Molar) as electrolyte, has been studied to check its ability as supercapacitor or battery. The amount of b-value can be used to prepare guidance for the practical design of high-performance electrode materials. In this report, the calculated b-value for cobalt sulfide electrode is closer to 1 in a very wide range of sweep rate (Fig.1). Therefore, the charge storage mechanism in these studied electrodes is capacitive rather than battery-type materials Details of this procedure along with the obtained values are illustrated in Figure 1. It can be seen that the calculated b-value is closer to 1 in a very wide range of sweep rate (from 5 to 50 mV s-1), charge storage mechanism in these studied electrodes is capacitive rather than intercalation/de-intercalation ((battery-type.

کلمات کلیدی: