عنوان مقاله:

Electrochemical performance of Nickel foam electrode in Potassium Hydroxide and Sodium Sulfate electrolytes for supercapacitor applications

محل انتشار:

فصلنامه کامپوزیت ها و ترکیبات, دوره 4, شماره 12 (سال: 1401)

تعداد صفحات اصل مقاله: 4

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خلاصه مقاله:

Nickel foam is a shallow-density metal part with very high electrical and thermal conductivity. Nickel foam is used widely as the current collector in electrochemical energy storage. In previous research, the electrolytes used for electrodes in energy sources in the laboratory are often of the aqueous electrolyte type due to their low cost and easy access. In this study, studies were performed to identify and confirm the accuracy of nickel foam, such as scanning electron microscopy and X-ray energy diffraction spectroscopy. Then, in common electrolytes, ۱ M potassium hydroxide (KOH) and ۰.۱ M sodium sulfate (Na۲SO۴) were investigated by CV, GCD, and EIS analyses. Finally, according to the data and results, the desired electrolyte can be selected depending on the type of use in different environments.Nickel foam is a shallow-density metal part with very high electrical and thermal conductivity. Nickel foam is used widely as the current collector in electrochemical energy storage. In previous research, the electrolytes used for electrodes in energy sources in the laboratory are often of the aqueous electrolyte type due to their low cost and easy access. In this study, studies were performed to identify and confirm the accuracy of nickel foam, such as scanning electron microscopy and X-ray energy diffraction spectroscopy. Then, in common electrolytes, ۱ M potassium hydroxide (KOH) and ۰.۱ M sodium sulfate (Na۲SO۴) were investigated by CV, GCD, and EIS analyses. Finally, according to the data and results, the desired electrolyte can be selected depending on the type of use in different environments.

کلمات کلیدی:

Electrochemical performance, Nickel Foam, Supercapacitor, Electrolyte, Current Collector