عنوان مقاله:

An Electrochemical Investigation of Nano Cerium Oxide/Graphene as an Electrode Material for Supercapacitors

محل انتشار:

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نویسندگان:

Mohammadreza Shishesaz - *Technical Inspection Engineering Department, Petroleum University of Technology, Abadan, Iran*

Mehdi Robat Sarpourshi - *Technical Inspection Engineering Department, Petroleum University of Technology, Abadan, Iran*

Mohammad Ali Golozar - *Materials Science Engineering Department, Isfahan University of Technology, Isfahan, Iran*

خلاصه مقاله:

In this paper, the effect of cationic and anionic ion sizes on the charge storage capability of graphenenanosheets is investigated. The electrochemical properties of the produced electrode are studied usingcyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS) techniques in 3M NaCl,NaOH, and KOH electrolytes. Scanning electron microscopy (SEM) is used to characterize themicrostructure and nature of the prepared electrode. The SEM images and X-ray diffraction (XRD)patterns confirm the layered structure (12 nm thickness) of the used graphene with an interlayerdistance of 3.36 Å. The electrochemical results and the ratio of**oTqqconfirm good charge storageand charge delivering capability of the prepared electrode in the 3M NaCl electrolyte.Charge/discharge cycling tests show a good reversibility and confirm that the solution resistance willincrease after 500 cycles.

کلمات کلیدی:

Electronic Materials, Nanostructures, Electrochemical Measurement, ElectricalProperties, Energy Storage