Patent Search

Invention Title	ANALYSIS OF MIXED-PHASE BISMUTH FERRITE OXIDE (BiFeO3) NANOCOMPOSITES BY GREEN APPROACH AS AN EFFICIENT ELECTRODE FOR SUPERCAPACITOR APPLICATION
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Abstract:

Analysis of mixed-phase bismuth ferrite oxide (BiFeO3) nanocomposites by green approach as an efficient electrode material for supercapacitor application is the pro invention. The proposed invention focuses on studying the Efficient Electrode Material for Supercapacitor Application. The invention focuses on analyzing the parame Mixed-Phase bismuth ferrite oxide (BiFeO3) Nanocomposites using algorithms of Green Approach.

Complete Specification

Description:[0001] Background description includes information that may be useful in understanding the present invention. It is not an admission that any of th information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.
[0002] Supercapacitors are a type of an electrochemical energy storage systems which have great power density and specific capacitance. These systems have the to efficiently release energy with a high density over a relatively short time. A supercapacitor, also called an ultracapacitor, is a high-capacity capacitor, with a capaci value much higher than other capacitors but with lower voltage limits.
[0003] A number of different types of Bismuth Ferrite oxide analysis systems that are known in the prior art. For example, the following patents are provided for t supportive teachings and are all incorporated by reference.
[0004] Mixed-phase bismuth ferrite oxide (BiFeO3) nanocomposites by green approach as an efficient electrode material for supercapacitor application:- The stuc presents bismuth ferrite nanomaterial (BiFeO 3) prepared by the green method using Moringa oleifera natural extract as an anode material for supercapacitor app Cyclic voltammetry, electrochemical impedance spectroscopy, and galvanostatic charge discharge methods were employed to evaluate the electrochemical properti the nanomaterial at the modified electrode relative to the unmodified electrode. The cyclic voltametric response revealed broad redox peaks and peak separations clearly indicated the pseudo-capacitive characteristics derived from faradaic reactions. The EIS results indicated that the electrochemical reaction on the material el is kinetically and diffusionally controlled. The obtained GCE/BiFeO 3 electrode has a specific capacitance of 105 F/g at 0,25 A g^{-1} , an energy density of 90 Wh k/g, an power density of 0,99 kW k/g. The electrochemical performance revealed an excellent electrochemical response, suggesting that BiFeO 3 nanomaterial is an ideal el material for supercapacitance applications. Graphical abstract

View Application Status