Abstract

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Synthesis of cytidine monophosphate-assisted reduced graphene oxide (N, P-rGO) as electrode material for supercapacitor applications

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Abstract

In this work, nitrogen and phosphorus co-doped reduced graphene oxide (N, P-rGO) nanohybrids has been synthesized using one pot greener in situ method using cytidine monophosphate as a dopant/reducing agent. This material has been characterized by various techniques such as UV-Vis, Raman, FE-SEM, TEM and thermal methods (TGA). The stability of N, P-rGO as an electrode material and the high operational potential window of 2.7 V (from -1.4 to 1.3 V) was achieved in three-electrode setup after running 150 electrochemical cyclic voltammetry (CV) cycles in neutral WIS 17 m NaClO4 electrolyte..

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Biography

Ikrar Ahmad received his M.Sc. (Chemistry) degree in 2014 from Gurukul Kangri University Haridwar, Uttarakhand. In 2017, he joined Indian Institute of Technology Roorkee, India under the supervision of Prof. Anil Kumar. Here, he is focusing on the development of electrode material(s) for designing supercapacitor for efficient energy storage applications.