Short Communication

Synthesis of Porous Carbon Sphere Based on Starch and Its Application of Electric Double Layer Capacitor

Bo Zhou^{1,2}, Erlin Meng¹, Zhenqian Chen^{2,*}

¹ SUST, School of Environment Science and Engineering, Suzhou University of Science and Technology, Suzhou, 215009, P. R. China

² IIUSE, Key Laboratory of Energy Thermal Conversion and Control of Ministry of Education, School of Energy and Environment, Southeast University, Nanjing, 210096, P. R. China

*E-mail: zhenqiancheniuse@163.com

doi: 10.20964/2018.03.32

Received: 11 November 2017 / *Accepted:* 22 December 2017 / *Published:* 5 February 2018

The present work reported the preparation of mesoporous activated carbon spheres (MCS) based on potato starch through the activation of CO₂. N₂ adsorption strategy was employed to investigate the influences of activation time and temperature on the MCS properties. On the other hand, the galvanostatic charge–discharge and cyclic voltammetry (CV) were applied to analyze the influence of the porosity on its electrochemical behaviors. The electrochemical experiment results confirmed that MCS was distinctive in its capacitive property and only has slight internal resistance. This corresponded to the maximal specific capacitance value.

Keywords: Double layer capacitor; Carbon sphere; Graphene; Starch; Cyclic voltammetry

[FULL TEXT](#)

© 2018 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).