



COIN2022

CONTEMPORARY BATTERIES AND SUPERCAPACITORS

INTERNATIONAL SYMPOSIUM
BELGRADE 2022

PROGRAM AND BOOK OF ABSTRACTS

June 1-2, 2022,
Serbian Academy of Sciences and Arts
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a) Батерије - Апстракти

Characterization and Application of Activated Carbon Materials Obtained from Sucrose by Chemical Activation Process

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In presented work, influence of temperature, starting material concentration and different activation agents (hydroxides) on properties and morphology of activated carbon materials obtained from sucrose were investigated. [1] The samples were prepared by hydrothermal treatment and activated using KOH, NaOH and LiOH. Two saccharose concentrations (0.5, 1.0 mol/dm³) and three different temperatures (180, 220, 260 °C) were changed in hydrothermal treatment. Activation processes were performed at 800 °C under inert atmosphere. Obtained samples were characterized by X-ray powder diffractometry, elemental analysis, N₂ adsorption-desorption measurements, Fourier-transform infrared spectrometry, scanning electron microscopy and thermal analysis. [2] The obtained samples were tested for potential application for cyclic voltammetry and electrochemical impedance spectroscopy and correlated to physicochemical properties.

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- [1] B. Hu, K. Wang, L. Wu, S. H. Yu, M. Antonietti, M. Titirici, Engineering Carbon materials from the hydrothermal carbonization process of biomass, *Adv. Mater.*, 22 (2010) 813.
[2] Harry Marsh Francisco Rodríguez Reinoso, *Activated Carbon*, Elsevier, 2006.