The Serbian Society for Ceramic Materials
Institute for Multidisciplinary Research (IMSI), University of Belgrade
Institute of Physics, University of Belgrade
Center of Excellence for the Synthesis, Processing and Characterization of Materials for use in Extreme Conditions "CEXTREME LAB" - Institute of Nuclear Sciences "Vinča", University of Belgrade
Faculty of Mechanical Engineering, University of Belgrade
Center of Excellence for Green Technologies, Institute for Multidisciplinary Research, University of Belgrade
Faculty of Technology and Metallurgy, University of Belgrade

PROGRAMME and the BOOK of ABSTRACTS

6CSCS-2022

6th Conference of the Serbian Society for Ceramic Materials
June 28-29. 2022. Belgrade Serbia

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Branko Matović
Aleksandra Dapčević
Vladimir V. Srdić

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O-4

CHARACTERIZATION OF ACTIVE CARBON MATERIALS OBTAINED FROM BIO WASTE FOR POTENTIAL USE IN WATER PURIFICATION

Irina Kandić, Milan Kragović, Andrijana Vasić, Neda Nišić, Katarina Nikolić, Jelena Gulicovski, Marija Stojmenović

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Adsorption is one of the well-known methods in the removal of various pollutants from water bodies. The activated carbon material has great potential in water purification as an adsorbent. In process of adsorption various pollutants from water, such as different type of pathogens and toxins that can be potential risk for human health, can be effectively removed by activated carbon. The aim of this study is detail characterization of newly synthesized activated carbon materials from bio-waste. Dried date palm leaf stalk (*Phoenix dactylifera* L.) and black alder cone-like flowers (*Alnus glutinosa* L.) have been chosen as bio-waste precursors. The activated carbon materials were firstly carbonized in atmosphere of N_2 and then activated in atmosphere of CO_2. Both processes are performed at 750 °C during 1 h. The yields of materials were 36.5 % and 24.7 % made of datepalm leaf stalk (P_AC) and black alder cone-like (A_AC) flowers, respectively. The commercial activated carbon has been characterized in order to compare with synthesized materials. For structural and chemical properties of materials was characterized in detail by: X-ray diffraction (XRD), Fourier-transform infrared spectroscopy (FTIR), low temperature N_2 physisorption and Field emission scanning electron microscopy (FESEM). According to those results, materials obtained from date palm leaf stalk and black alder fruits show that newly synthesized materials have properties of an adsorbent with good potential for usage in water purification from different types of pollutants.