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YUCOMAT 2013

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PROGRAMME &
THE BOOK OF ABSTRACTS

Organised by
MATERIALS RESEARCH SOCIETY OF SERBIA

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FEDERATION OF EUROPEAN MATERIALS SOCIETIES (FEMS)
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P.S.C.8.

SURFACE CHARACTERISATION OF MECHANOCHEMICALY ACTIVATED CARBON CLOTH

A. Djukić[1], J. Grbović Novaković[1], Z. Stojanović[2], I. Milanović[1], R. Vujasin[1], S. Milošević[1], Lj. Matović[1]
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Adsorption on activated carbon cloth is an efficient procedure for removing pollutants from wastewaters, because this material possesses large specific area and high adsorption capacity. In this study the activated carbon cloth was modified by mechanical milling in order to improve its sorption properties. The microstructure and morphology of the sample was investigated by XRD, PSD and SEM and surface chemistry was characterized by potentiometric titrations. The result showed that microstructure and morphology was drastically changed with milling: particle sizes reduction, agglomeration and the loss of fibrous structure occurred. These changes resulted in increase of the acidic and the base groups: the number of basic groups was increased by the factor of 11 while the number of acidic groups by the factor of 1.5.

P.S.C.9.

HYDROTHERMAIL SYNTHESIS AND CHARACTERIZATION OF $BiFeO_3$

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With $Bi(NO_3)_3 \cdot 5H_2O$ and $Fe(NO_3)_3 \cdot 9H_2O$ as starting material and 8 M KOH as mineralizer, the pure-phase $BiFeO_3$ (BFO) powders were synthesized by hydrothermal method at 200 °C. The microstructure, morphology and chemical analysis of the powders were analyzed using Scanning Electron Microscopy (SEM) combined with X-ray microanalysis (by Energy Dispersive Spectrometer – EDS). The phase composition of obtained samples was determined by X-ray diffraction (XRD) analysis. It revealed that synthesized material crystallize in space group R3c with cell parameters a = b = 5.5780(10) Å and c = 13,863(3) Å. The particle size and distribution was determined by small – angle X-ray scattering (SAXS). The magnetic behavior of synthesized material is done by means of SQUID device.