



Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION IX
New Frontiers in Multifunctional Material Science and Processing

Serbian Ceramic Society
Institute of Technical Sciences of SASA
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
Institute for Technology of Nuclear and Other Raw Mineral Materials

PROGRAM AND THE BOOK OF ABSTRACTS

Serbian Academy of Sciences and Arts, Knez Mihailova 35
Serbia, Belgrade, 20-21. September 2021.

Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION IX
New Frontiers in Multifunctional Material Science and Processing

Serbian Ceramic Society
Institute of Technical Science of SASA
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
Institute for Technology of Nuclear and Other Raw Mineral Materials
PROGRAM AND THE BOOK OF ABSTRACTS

Serbian Academy of Sciences and Arts, Knez Mihailova 35
Serbia, Belgrade, 20-21. September 2021

Book title: Serbian Ceramic Society Conference - ADVANCED CERAMICS AND APPLICATION IX Program and the Book of Abstracts

Publisher:

Serbian Ceramic Society

Editors:

Prof.dr Vojislav Mitić

Dr Lidija Mančić

Dr Nina Obradović

Technical Editors:

Ivana Dinić

Marina Vuković

Printing:

Serbian Ceramic Society, Belgrade, 2021

Edition:

100 copies

CIP - Каталогизacija y publikaciji
Народна библиотека Србије, Београд

666.3/.7(048)

66.017/.018(048)

SRPSKO KERAMIČKO DRUŠTVO. CONFERENCE ADVANCED CERAMICS AND APPLICATION : NEW FRONTIERS IN MULTIFUNCTIONAL MATERIAL SCIENCE AND PROCESSING (9 ;2021 ; BEOGRAD)

Program ; and the Book of abstracts / Serbian Ceramic Society Conference Advanced Ceramics and Application IX : New Frontiers in Multifunctional Material Science and Processing, Serbia, Belgrade, 20-21. September 2021 ; [organized by Serbian Ceramic Society ... [et al.] ; [editors Vojislav Mitić, Lidija Mančić, Nina Obradović]. - Belgrade : Serbian Ceramic Society, 2021 (Belgrade : Serbian Ceramic Society). - 93 str. : ilustr. ; 30 cm

Tiraž 100.

ISBN 978-86-915627-8-6

а) Керамика -- Апстракти б) Наука о материјалима -- Апстракти в) Наноматеријали -- Апстракти

COBISS.SR-ID 45804553

catalysts were beneficial for the reaction. All investigated catalysts were found to be very efficient in the Oxone® initiated tartrazine decolorization and degradation.

Acknowledgement: This work was financially supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Grant No. 451-03-9/2021-14/200026).

INV

Preparation and Characterization Of Active Carbon Microspheres Obtained From Fructose And Adsorption Application

Sanja S. Krstić, Vladimir M. Dodevski, Đuro Čokeša, Aleksandar B. Devečerski, Radojka T. Vujasin, Ksenija V. Kumrić, Branka V. Kaluđerović

Institut za nuklearnu nauku „Vinča“ - Institut od nacionalnog značaja za Republiku Srbiju,
Univerzitet u Beogradu, Beograd, Srbija

Carbon material with active surface properties have been synthesized by hydrothermal method from fructose using 40% and 80% phosphoric acid (H_3PO_4) solution, at temperature of 260°C and fructose concentration of 2M. The aim of this investigation was active carbon material synthesis which is completed by one step reaction, which was not the case in our previous works. Thus, compared with other samples from our works, this way is more economic and faster since both reaction of carbonization and activation was finished in one step. The hydrothermal process, in general, includes heat treatment of carbohydrate solutions under autogenous pressure at low temperatures (150–260 °C). Obtained solid carbon material has uniform morphology, amorphous structure and high content of oxygen functional groups. Prepared active carbon material is made up of spherical microsphere particles with the diameter in the range of 0.6-2.7 μm . The morphology and surface properties of obtained material were characterized by scanning electron microscopy (SEM), Fourier-transform infrared (FTIR) spectra. Adsorption and desorption isotherms of N_2 were measured on carbon containing material at -196 °C using the gravimetric McBain method. Adsorption from aqueous solutions of Methylene Blue (MB) onto prepared carbon material was conducted by changing concentration of MB from 200-500 mg/dm³. The best fit of the kinetic results was achieved by a pseudo second-order equation. Also, this nature of material is applicable in other systems regarding environmental protection and dye pollution prevention.