Examination of mineral composition and color origin in natural pigments from France and Finland that are stored in the collection of rocks and minerals, University of Belgrade

Alena Zdravković, Maja Milošević

Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION X
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, 26-27. September 2022.

Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION X
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, 26-27th September 2022.

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

Publisher:
Serbian Ceramic Society

Editors:
Dr. Nina Obradović
Dr. Lidija Mančić

Technical Editors:
Dr. Suzana Filipović
Dr. Adriana Peleš Tadić
Dr. Jelena Živojinović

Printing:
Serbian Ceramic Society, Belgrade, 2022.

Edition:
120 copies

CIP - Каталогизација у публикацији
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 (10 ; 2022 ; Beograd)
Program ; and the Book of abstracts / Serbian Ceramic Society Conference Advanced Ceramics and Application X New Frontiers in Multifunctional Material Science and Processing, Serbia, Belgrade, 26-27. September 2022. ; [editors Nina Obradović, Lidija Mančić]. - Belgrade : Serbian Ceramic Society, 2022 (Belgrade : Serbian Ceramic Society). - 96 str. : ilustr. ; 30 cm

Tiraž 120.

ISBN 978-86-915627-9-3

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

COBISS.SR-ID 74827529

P4

Examination of mineral composition and color origin in natural pigments from France and Finland that are stored in the collection of rocks and minerals, University of Belgrade

Alena Zdravković, Maja Milošević

University of Belgrade, Faculty of Mining and Geology, Đušina 7, 11000 Belgrade, Serbia

The natural mineral pigments, known as ocher, are stored in The Collection of Rocks and Minerals, Faculty of Mining and Geology, University of Belgrade. Powdered samples of yellow limonite from France (No.421) and red limonite from Finland (No.423) were donated at the end of the XIX century by St. Petersburg Mining Institute. As ocher consists of a mixture of clay minerals, sand and iron oxide/hydroxide, its color depends on the presence of the particular mineral. This work aimed to examine the mineral composition and color of raw and annealed (1000 °C) samples by application of NIR-VIS infrared spectroscopy. Sample No.421 consists of a halloysite-kaolinite clay mixture, with a yellowish-orange (580nm) color that changes to reddish-orange (595nm) after annealing. Sample No.423 consists of kaolinite clay, it is reddish-orange (599nm) in color with a slight change of wavelength after treatment (603nm). Further investigation is needed to determine the influence of chemistry on the final color.

P5

Comparison of raw clay from different localities for application in the production of traditional pottery in Serbia

Milošević Maja[1], Zdravković Alena[1] and Đorđević Biljana[2]

[1]University of Belgrade, Faculty of Mining and geology, Đušina 7, 11000 Belgrade, Serbia;
[2]National Museum of Serbia, Trg republike 1a, Belgrade, Serbia

In western Serbia, the modelling technique and technological procedure of traditional pottery production still rely on a “slow wheel” combined with the coiling technique while in the eastern parts of Serbia traditional pottery is produced by hand with the help of several wooden and metal tools. The optimal way of making these types of pottery vessels is dictated by the composition of the clay body that is used in the production. By comparison of two raw clay bodies from different localities and based on their mineralogy, obtained by X-ray diffraction, scanning electron microscope and differential thermal analyses, we have gained insight into the process of selection in the production technique characteristic for the specific type of pottery in the investigated regions in Serbia. The obtained information will additionally aid in the preservation of this type of intangible cultural and geo heritage.
Acknowledgement: Contract on realization and financing of scientific research work NIO in 2022, No. 451-03-68/2022-14/200126