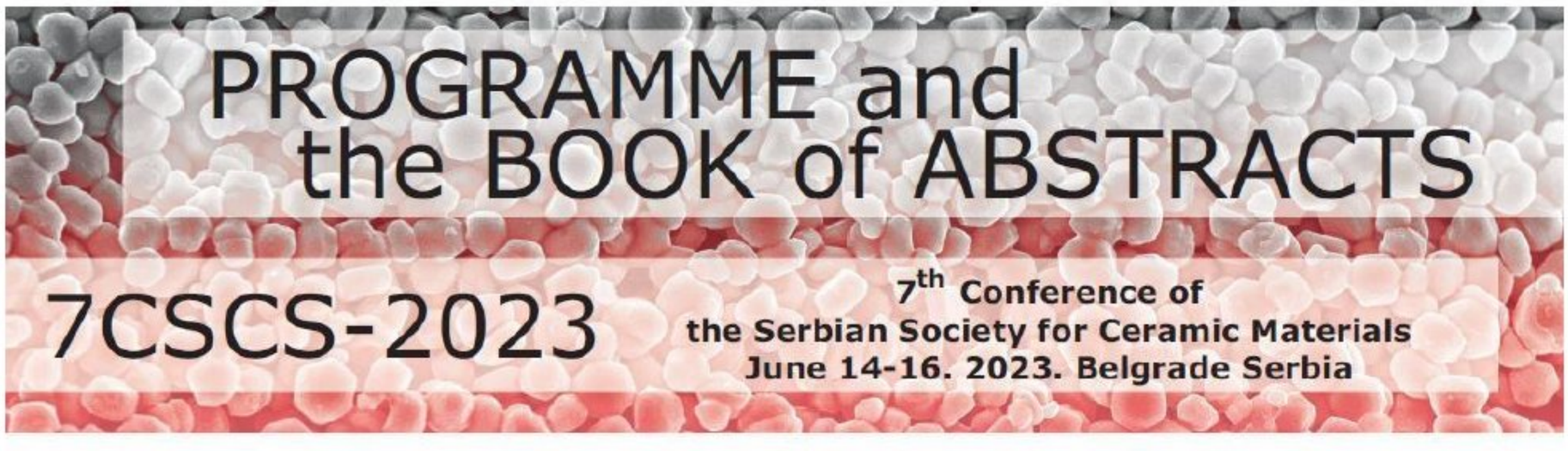
Synthesis, characterization and photocatalytic examination of Co0.9Ho0.1MoO4 nanopowders

Milena Rosić, Maja Milošević, Maria Čebela, Vladimir Dodevski, Vesna Lojpur, Radomir Ljupković, Aleksandra Zarubica

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



Edited by:
Branko Matović
Jelena Maletaškić
Vladimir V. Srdić

Programme and Book of Abstracts of The Seventh Conference of The Serbian Society for Ceramic Materials **publishes abstracts from the field of ceramics, which are presented at international Conference.**

Editors-in-Chief
Dr Branko Matović
Dr. Jelena Maletaškić
Prof. Vladimir V. Srdić

Publisher
Institut za multidisciplinarna istraživanja
Kneza Višeslava 1, 11000 Belgrade, Serbia

For Publisher
Dr Dragica Stanković

Printing layout
Dr. Jelena Maletaškić, Vladimir V. Srdić

Press
Faculty of Technology and Metalurgy, Research and Development Centre of Printing Technology, Karnegieva 4, Belgrade, Serbia

Published: 2023

Circulation: 120 copies

CIP – Каталогизација у публикацији
Народна библиотека Србије, Београд

666.3/.7(048)
66.017/.018(048)

DRUŠTVO za keramičke materijale Srbije, Konferencija (7; 2023, Beograd)
Programme ; and the Book of Abstracts / 7th Conference of The Serbian Society for Ceramic Materials, 7CSCS-2023, June 14-16, 2023 Belgrade, Serbia ; [organizers] The Serbian Society for Ceramic Materials ... [et al.] ; edited by Branko Matović, Aleksandra Dapčević, Vladimir V. Srdić. - Belgrade :
Institut za multidisciplinarna istraživanja, 2023 (Belgrade : Faculty of technology and metalurgy, Research and development centre of printing technology). -124 str. : ilustr. ; 25 cm
Tiraž 120. – Str. 7: Welcome message / Branko Matović. - Registar.

ISBN 978-86-80109-24-4

a) Керамика -- Апстракти b) Наука о материјалима – Апстракти v) Наноматеријали -- Апстракти

COBISS.SR-ID 117544969

The Serbian Society for Ceramic Materials
Institute for Multidisciplinary Research, 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

7th Conference of The Serbian Society for Ceramic Materials

June 14-16, 2023
Belgrade, Serbia
7CSCS-2023

Edited by:
Branko Matović
Jelena Maletaškić
Vladimir V. Srdić

SPECIAL THANKS TO

Република Србија
МИНИСТАРСТВО НАУКЕ,
ТЕХНОЛОШКОГ РАЗВОЈА И ИНОВАЦИЈА

SERBIA

NATIONAL TOURISM ORGANISATION of SERBIA

Turistička organizacija Beograda

Committees

Organizer

- 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

Scientiific Committee

1. Dr. Snežana Bošković, Institute of Nuclear Sciences "Vinča", University of Belgrade, *Serbia*
2. Prof. Biljana Stojanović, Institute for Multidisciplinary Research, University of Belgrade, *Serbia*
3. Dr. Branko Matović, Institute of Nuclear Sciences "Vinča", University of Belgrade, *Serbia*
4. Prof. Vladimir V. Srdić, Faculty of Technology, University of Novi Sad, *Serbia*
5. Dr. Zorica Branković, Institute for Multidisciplinary Research, University of Belgrade, *Serbia*
6. Dr. Goran Branković, Institute for Multidisciplinary Research, University of Belgrade, *Serbia*
7. Dr. Zorana Dohčević-Mitrović, Institute of Physics, University of Belgrade, *Serbia*
8. Prof. Tatjana Volkov-Husović, Faculty of Technology and Metallurgy, University of Belgrade, *Serbia*
9. Dr. Gordana Bakić, Faculty of Mechanical Engineering, University of Belgrade, *Serbia*
10. Dr. Aleksandar Maslarević, Faculty of Mechanical Engineering, University of Belgrade, *Serbia*
11. Dr. Zvezdana Baščarević, Institute for Multidisciplinary Research, University of Belgrade, *Serbia*
12. Dr. Dejan Zagorac, INN Vinca, University of Belgrade, *Serbia*

preliminary Q-band measurement indicates that this spectrum is a superimposition of the spectra of VO^{2+} ions located in two different positions in the KGa-1 structure). A sharp intense peak near $g = 2.002$ is assigned to defects that are always present in the clays [3].

P-2

SYNTHESIS, CHARACTERIZATION AND PHOTOCATALYTIC EXAMINATION OF $Co_{0.9}Ho_{0.1}MoO_4$ NANOPOWDERS

Milena Rosić[1], Maja Milošević[2], Maria Čebela[1], Vladimir Dodevski[1], Vesna Lojpur[3], Radomir Ljupković[4], Aleksandra Zarubica[4]

[1]Laboratory for Material Science, Institute of Nuclear Sciences „Vinča“, National Institute of the Republic of Serbia, University of Belgrade, P.O. Box 522, 11001 Belgrade, Serbia
[2]Department of Mineralogy, Crystallography, Petrology and Geochemistry, Faculty of Mining and Geology, University of Belgrade, Đušina 7, 11000 Belgrade, Serbia
[3]Department of Atomic Physics, Vinča Institute of Nuclear Sciences, National Institute of the Republic of Serbia, University of Belgrade, P.O. Box 522, 11001 Belgrade, Serbia
[4]Department of Chemistry, Faculty of Science and Mathematics, University of Niš, Višegradska 33, 18000 Niš, Serbia

$Co_{0.9}Ho_{0.1}MoO_4$ nanopowders were obtained by applying glycine nitrate procedure (GNP). The synthesized samples were investigated by DTA, X-ray diffraction (XRD), Fourier transform infrared (FT-IR) spectra, Spectroscopy, Field emission scanning electron microscopy (FESEM), and nitrogen adsorption method. The photocatalytic activity of acquired $Co_{0.9}Ho_{0.1}MoO_4$ nanopowders was estimated by the photocatalytic degradation of crystal violet in aqueous solution. A simple and effective method for controlling the composition and morphology of $Co_{0.9}Ho_{0.1}MoO_4$ is presented in this paper, as well as a potentially new approach in the methodology of inorganic synthesis. During photocatalytic testing nanostructured material $Co_{0.9}Ho_{0.1}MoO_4$ indicated the possibility of a promising solution in photocatalytic processes towards green chemistry and sustainable development.

1. M. Rosić, A. Zarubica, A. Šaponjić, B. Babić, J. Zagorac, D. Jordanov, B. Matović, *Mater. Res. Bull.*, **98** (2018) 111–120.