

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 for Green Technologies, Institute for Multidisciplinary Research,
University of Belgrade
Faculty of Technology and Metallurgy, University of Belgrade
Faculty of Technology, University of Novi Sad

A microscopic image of ceramic particles, showing a transition from white to red. The particles are spherical and densely packed. The top half is white, and the bottom half is red, with a horizontal boundary line.

PROGRAMME and the BOOK of ABSTRACTS

5CSCS-2019

5th Conference of
the Serbian Society for Ceramic Materials
June 11-13.2019. Belgrade Serbia

Edited by:
Branko Matović
Zorica Branković
Aleksandra Dapčević
Vladimir V. Srdić

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

Editors-in-Chief

Dr. Branko Matović

Dr. Zorica Branković

Prof. Aleksandra Dapčević

Prof. Vladimir V. Srdić

Publisher

Institute for Multidisciplinary Research, University of Belgrade

Kneza Višeslava 1, 11000 Belgrade, Serbia

For Publisher

Prof. Dr Sonja Veljović Jovanović

Printing layout

Vladimir V. Srdić

Press

Faculty of Technology and Metallurgy, Research and Development Centre of Printing Technology, Karnegijeva 4, Belgrade, Serbia

Published: 2019

Circulation: 150 copies

CIP - Каталогизacija y publikaciji - Narodna biblioteka Srbije, Beograd

666.3/.7(048)

66.017/.018(048)

DRUŠTVO za keramičke materijale Srbije. Konferencija (5 ; 2019 ; Beograd)

Programme ; and the Book of Abstracts / 5th Conference of The Serbian Society for Ceramic Materials, 5CSCS-2019, June 11-13, 2019, Belgrade, Serbia ; [organizers]

The Serbian Society for Ceramic Materials ... [et al.] ; edited by Branko Matović ...

[et al.]. - Belgrade : Institute for Multidisciplinary Research, University, 2019

(Beograd : Faculty of Technology and Metallurgy, Research and Development Centre of Printing Technology). - 139 str. : ilustr. ; 24 cm

Tiraž 150. - Str. 6: Welcome message / Branko Matovic. - Registar.

ISBN 978-86-80109-22-0

a) Керамика - Апстракти

b) Наука о материјалима - Апстракти

c) Наноматеријали - Апстракти

COBISS.SR-ID 276897292

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 for Green Technologies, Institute for Multidisciplinary Research,
University of Belgrade
Faculty of Technology and Metallurgy, University of Belgrade
Faculty of Technology, University of Novi Sad

PROGRAMME AND THE BOOK OF ABSTRACTS

**5th Conference of The Serbian Society for
Ceramic Materials**

June 11-13, 2019
Belgrade, Serbia
5CSCS-2019

Edited by:
Branko Matović
Zorica Branković
Aleksandra Dapčević
Vladimir V. Srdić

P-4

INFLUENCE OF Co²⁺ IONS ON PHOTOCATALYTIC PROPERTIES OF MgFe₂O₄ FERRITES

Zorka Z. Vasiljevic¹, Milena Dojcinovic², Vera P. Pavlovic³,
Jelena Vujancevic¹, Smilja Markovic¹, Nenad Tadic⁴, Maria V. Nikolic²

¹*Institute of Technical Sciences, Serbian Academy of Sciences and Arts,
Belgrade, Serbia*

²*Institute for Multidisciplinary Research, University of Belgrade, Serbia*

³*Faculty of Mechanical Engineering, University of Belgrade, Serbia*

⁴*Faculty of Physics, University of Belgrade, Belgrade, Serbia*

In this work, spinel magnesium cobalt ferrites (Co_xMg_{1-x}Fe₂O₄, x = 0.0, 0.1, 0.3, 0.5, 0.7, 0.9) were synthesized by a sol-gel combustion method. Magnesium nitrate, cobalt nitrate and iron nitrate were used as oxidizers and citric acid was used as a reducing agent. The effects of cobalt ions on structural and morphological properties were investigated and characterized by X-ray diffraction (XRD), Raman spectroscopy, Field emission scanning electron microscope (FESEM) and Fourier transform infrared (FT-IR) spectroscopy. A cubic spinel structure formed with a varied distribution of cobalt and magnesium ions on tetrahedral and octahedral sites that depended on their content. All ferrite powders consisted of multigrain agglomerates. Optical properties were investigated by UV-*vis* spectrophotometry. The photocatalytic activity of as prepared samples was evaluated by measuring the rate of photodegradation reaction of methylene blue (MB) under visible light irradiation. After 240 min, compared to other samples, the sample labeled as Co_{0.1}Mg_{0.9}Fe₂O₄ showed the best rate of photodecomposition of MB resulting in reduction of 90% of its initial concentration.