

TWENTY-SECOND ANNUAL CONFERENCE

YUCOMAT 2021

Program

and

Book of Abstracts

endorsed by

FEMS

FEDERATION OF EUROPEAN
MATERIALS SOCIETIES

SERBIA
MRS

Materials Research
Society of Serbia



TWENTY-SECOND ANNUAL CONFERENCE

YUCOMAT 2021

Hunguest Hotel Sun Resort, Herceg Novi, Montenegro

August 30 - September 3, 2021

<http://www.mrs-serbia.org.rs>

Program and Book of Abstracts

Organised by:

Materials Research Society of Serbia

Endorsed by:

Federation of European Material Societies

CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

66.017/.018(048)

**DRUŠTVO za istraživanje materijala Srbije (Beograd). Godišnja konferencija
(22 ; 2021 ; Herceg Novi)**

Programme ; and the Book of abstracts / Twenty-second Annual Conference YUCOMAT
2021 Herceg Novi, Montenegro, August 30 - September 3, 2021 ; organised by Materials
Research Society of Serbia ; [editor Dragan P. Uskoković]. - Belgrade : Materials Research
Society of Serbia, 2021 (Herceg Novi : Biro Konto). - XXXIII, 146 str. : ilustr. ; 23 cm

Tiraž 150. - Bibliografija uz pojedine apstrakte. - Registar.

ISBN 978-86-919111-6-4

a) Наука о материјалима—Апстракт(и) Технички материјали—Апстракт(и)

COBISS.SR-ID 44447497

Title: THE TWENTY-SECOND ANNUAL CONFERENCE
YUCOMAT 2021
Program and Book of Abstracts

Publisher: Materials Research Society of Serbia
Knez Mihailova 35/IV, P.O. Box 433, 11000 Belgrade, Serbia
Phone: +381 11 2185-437; <http://www.mrs-serbia.org.rs>

Editor: Prof. Dr. Dragan P. Uskoković

Technical editor: Jasmina R. Jevtić

Typesetting

and prepress: Dr. Aleksandar Dekanski

Cover page: Nenad Ignjatović

Covers: Images on front & back covers are the property of MRS Serbia

ISBN 978-86-919111-6-4

Copyright © 2021 Materials Research Society of Serbia - MRSS

MRSS is member of the
Federation of European Materials Societies



Printed in: Biro Konto
Sutorina bb, Igalo – Herceg Novi, Montenegro
Phones: +382-31-670123, 670025, E-mail: bkonto@t-com.me
Circulation: 150 copies. The end of printing: August 2021

P.S.III.15.

Improvement of bioactivity, biocompatibility, and antibacterial properties of titanium scaffold by coating with bioactive glasses and Ag-doped HAP

Marija Miliwojević¹, Željko Radovanović¹, Suzana Dimitrijević², Rada Petrović², Danica Marković³, Đorđe Janačković²

¹Innovation Center of Faculty of Technology and Metallurgy, ²Faculty of Technology and Metallurgy University of Belgrade, ³Faculty of Veterinary Medicine University of Belgrade

P.S.III.16.

Modelling of catalytic activity and enzyme-MOF interactions using combined *in silico* approach

Milan Senčanski¹, Radivoje Prodanović², Predrag Ristić², Ana Marija Balaž³, Marija Stanišić², Tamara Todorović²

¹Vinča Institute of Nuclear Sciences, National Institute of the Republic of Serbia, University of Belgrade, Serbia, ²University of Belgrade, Faculty of Chemistry, Serbia, ³Institute of Chemistry, Technology and Metallurgy, National Institute of the Republic of Serbia, University of Belgrade, Serbia

P.S.III.17.

Synthesis and characterization of Zn(II) and Bi(III) complexes with N-substituted glycine hydrazones

Nevena Stevanović¹, Snežana Selaković¹, Temiloluwa Adejumo², Maja Šumar-Ristović², Božidar Čobeljić², Katarina Anđelković²

¹Innovation Center of the Faculty of Chemistry, University of Belgrade, Studentski trg 12-16, 11000 Belgrade, Serbia, ²Faculty of Chemistry, University of Belgrade, Studentski trg 12-16, 11000 Belgrade, Serbia

P.S.III.18.

Promising Hydroxyapatite/Nifuroksazid Conjugate

Željko Radovanović¹, Katarina Mihajlovska², Lidija Radovanović¹, Rada Petrović², Đorđe Janačković²

¹University of Belgrade, Innovation Center of the Faculty of Technology and Metallurgy, Belgrade, Serbia, ²University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia

P.S.III.19.

New biomaterials with Saccharide components. III. The influence of trehaloses on cell membrane enzyme activity and some application in vaccine production

M. M. Plavšić^{1,2}, D. S. Savić¹, S. R. Savić¹, M. B. Plavšić³

¹University of Niš, Faculty of Technology, Leskovac, ²The Academy of Applied Technical Studies Belgrade, ³Belgrade University

P.S.III.20.

Electrospun composite nanofibers containing biocompatible inorganic tungsten disulfide nanoparticles

Dušica B. Stojanović¹, Sergej Tomić², Marina Bekić², Snežana Zečević³, Darinka Popović³, Miodrag Čolić³, Petar S. Uskoković¹

¹University of Belgrade - Faculty of Technology and Metallurgy, Department of Materials Science and Engineering, Karnegijeva 4, 11120 Belgrade, Serbia, ²University of Belgrade- Institute for the Application of Nuclear Energy, Banatska 31b, 11000 Belgrade, Serbia, ³University of East Sarajevo- Medical Faculty in Foča, Studentska 5, 73 300 Foča, Bosnia and Herzegovina

Poster Presentations

P.S.III.18.

Promising Hydroxyapatite/Nifuroksazid Conjugate

Željko Radovanović¹, Katarina Mihajlovski², Lidija Radovanović¹, Rada Petrović²,
Đorđe Janačković²

¹University of Belgrade, Innovation Center of the Faculty of Technology and Metallurgy, Belgrade, Serbia, ²University of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia

The synergistic effect of two materials is a desirable phenomenon when designing a conjugate material. Synthetic Hydroxyapatite (HAp, $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$) is very similar to the inorganic part of bones and teeth of mammals. It is a well-known biomaterial with good biocompatibility, osteoconductivity and bioactivity. Nifuroxazide (NFX, $\text{C}_{12}\text{H}_9\text{N}_3\text{O}_5$) is a broad-spectrum antibacterial drug and poorly soluble in water. Nano HAp and NFX were mixed and homogenized in rotovapor giving as a result HAp/NFX conjugate. All materials were analyzed by Fourier transform infrared spectroscopy (FTIR), Field emission scanning electron microscopy (FESEM), X-Ray diffraction (XRD), Thermogravimetry (TG) and Brunauer–Emmett–Teller (BET) method. The *in vitro* antibacterial activities of HAp, NFX and HAp/NFX were examined against Gram-positive bacteria *Staphylococcus aureus*, Gram-negative bacteria *Escherichia coli* and yeast *Candida albicans*. *In vitro* drug release in simulated stomach acid and intestinal fluid showed a much faster release of NFX from HAp surface than those of raw drug. Afore mentioned analyses showed the unique properties of the HAp/NFX conjugate and introduced it as particularly prominent drug carrier.

Acknowledgements: This work was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Contract No. 451-03-68/2021-14/200287 and 451-03-68/2021-14/200135).

ACKNOWLEDGEMENTS

Sponsors

MRS

Materials Research Society

S I N G A P O R E

<https://mrs.org.sg>



Univerzitet u Beogradu
Tehnološko-metalurški fakultet



Media partners





ISBN 978-86-919111-6-4



9 788691 911164 >