

SEVENTEENTH YOUNG RESEARCHERS' CONFERENCE MATERIALS SCIENCE AND ENGINEERING

December 5-7, 2018, Belgrade, Serbia

Program and the Book of Abstracts

Materials Research Society of Serbia &

Institute of Technical Sciences of SASA

November 2018, Belgrade, Serbia

Book title:

Seventeenth Young Researchers' Conference - Materials Science and Engineering: Program and the Book of Abstracts

Publisher:

Institute of Technical Sciences of SASA Knez Mihailova 35/IV, 11000 Belgrade, Serbia

Tel: +381-11-2636994, 2185263, http://www.itn.sanu.ac.rs

Editor:

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Cover page: Aleksandra Stojičić and Milica Ševkušić

Cover: Modified Photo by Dani Lavi 0007; Wikimedia Commons

(https://commons.wikimedia.org/wiki/File:Belgrade at night.jpg); CC BY-SA

4.0

Printer:

Gama digital centar Autoput No. 6, 11070 Belgrade, Serbia Tel: +381-11-6306992, 6306962 http://www.gdc.rs

Edition:

130 copies

CIP - Каталогизација у публикацији - Народна библиотека Србије, Београд 66.017/.018(048)

YOUNG Researchers Conference Materials Sciences and Engineering (17; 2018; Beograd)

Program; and the Book of Abstracts / Seventeenth Young Researchers' Conference Materials Sciences and Engineering, December 5-7, 2018, Belgrade, Serbia; [organized by] Materials Research Society of Serbia & Institute of Technical Sciences of SASA; [editor Smilja Marković]. -Belgrade: Institute of Technical Sciences of SASA, 2018 (Beograd: Gama digital centar). - XX, 100 str.; 23 cm

Tiraž 130. - Registar. ISBN 978-86-80321-34-9

- 1. Društvo za istraživanje materijala Srbije (Beograd) 2. Institut tehničkih nauka SANU (Beograd)
- а) Наука о материјалима Апстракти b) Технички материјали Апстракти COBISS.SR-ID 270509836

Aim of the Conference

Main aim of the conference is to enable young researchers (post-graduate, master or doctoral student, or a PhD holder younger than 35) working in the field of materials science and engineering, to meet their colleagues and exchange experiences about their research.

Topics

Biomaterials

Environmental science

Materials for high-technology applications

Nanostructured materials

New synthesis and processing methods

Theoretical modelling of materials

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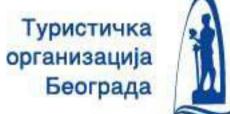
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Results of the Conference

Beside printed «Program and the Book of Abstracts», which is disseminated to all conference participants, selected and awarded peer-reviewed papers will be published in journal "Tehnika – Novi Materijali". The best presented papers, suggested by Session Chairpersons and selected by Awards Committee, will be proclaimed at the Closing Ceremony. Part of the award is free-of-charge conference fee at YUCOMAT 2019.

Sponsors







Acknowledgement

The editor and the publisher of the Book of abstracts are grateful to the Ministry of Education, Sciences and Technological Development of the Republic of Serbia for its financial support of this book and The Seventeenth Young Researchers' Conference - Materials Sciences and Engineering, held in Belgrade, Serbia.

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Biodegradable microparticles as a scaffolds for cell therapy

Nenad Filipović, ¹ Giuseppe Digilio, ² Valeria Catanzaro, ² Federico Capuana, ³ Sergio Padovan, ⁴ Juan C. Cutrin, ³ Fabio Carniato, ² Stefano Porta, ³ Cristina Grange, ⁵ Magdalena Stevanović ¹

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Cell therapy is promising strategy that has attracted a lot of attention recently regarding regeneration of diverse tissues and treatment of various pathological conditions. Despite its great potential, several issues still need to be addressed. Among them administration route and dose, microenvironment conditions and host immune response are recognized as a major causes which lead to cells transplantation failure. In this work it is presented novel microstructural system based on biodegradable polymer poly(lactide-co-glycolide) (PLGA) and combination of biocompatible polyvinyl alcohol (PVA) and chitosan, as a scaffold for human mesenchymal stem cells (hMSCs) growth. The obtained microparticles with diameter 200-600 µm showed full biocompatibility with human hMSCs. Besides serving as a solid support, polymeric particles provided controlled release of contrast agent - gadolinium fluoride nanoparticles (Gd-NP) up to 5 weeks. The release of Gd-NP is enhanced by acidic conditions. Magnetic Resonance Imaging (MRI) of the samples embedded in 1% agar showed that contrast enhancement in T1-weighted (T1w) MR images is influenced by the amount of released Gd-NP. Based on these preliminary results, presented theranostic system could be considered for cells grafting.

This work is supported by the Ministry of Foreign Affairs and International Cooperation (Research Project 5 of Particular Relevance between Italy and Serbia - PGR02952), the Italian Ministry of University and Education (PRIN-2010 n. 2010B5B2NL) and the Ministry of Education, Science and Technological Development of Serbia (III45004). The imaging technologies used in this work were provided thanks to the Euro-BioImaging network (www.eurobioimaging.eu), particularly Molecular Imaging Italian Node (MMMI, Torino, Italy).