

**NINTH ANNUAL CONFERENCE OF THE YUGOSLAV MATERIALS  
RESEARCH SOCIETY**

# **YUCOMAT 2007**

Hotel "Plaža", Herceg Novi, Montenegro, September 10-14, 2007  
<http://www.yu-mrs.org.yu>

## **Programme and The Book of Abstracts**

Organised by:  
**Yugoslav Materials Research Society,  
Faculty of Metallurgy and Technology, Podgorica  
and  
Institute of Technical Sciences of the  
Serbian Academy of Sciences and Arts, Belgrade**

**Title:** THE NINTH YUGOSLAV MATERIALS RESEARCH SOCIETY CONFERENCE  
“YUCOMAT 2007”  
Programme  
and  
The Book of Abstracts

**Publisher:** Institute of Technical Sciences of SASA  
Knez Mihailova 35/IV; P.O. Box 377, 11000 Belgrade, Serbia  
Phone: +381 11 2185-437; Fax: + 381 11 2185-263  
<http://www.itn.sanu.ac.yu>

**Editor:** Prof. Dr. Dragan P. Uskoković

**Technical editor:** Aleksandra Stojičić

**Cover page:** Aleksandra Stojičić

**Copyright** © 2007 Institute of Technical Sciences of the Serbian Academy of Sciences & Arts

**Acknowledgment:** The editor of the book of abstracts is grateful to the Ministry of Science of the Republic of Serbia for its financial support of this book and The Ninth Yugoslav Materials Research Society Conference “YUCOMAT 2007” held in Herceg Novi.



**Printed in:** Printing office “Čigoja”  
Studentski trg 15, 11000 Belgrade  
Phones: + 381 11 2186-725; + 381 11 625-954  
Circulation: 300 copies. The end of printing: July 2007.

ISBN 978-86-80321-11-0



CIP – Каталогизација у публикацији  
Народна библиотека Србије, Београд

66.017/.018(048)

YUGOSLAV Materials Research Society  
(Beograd). Conference (9 ; 2007 ; Herceg  
Novi)

Programme and the Book of Abstracts /  
Ninth Annual Conference of the Yugoslav  
Materials Research Society YUCOMAT 2007,  
Herceg Novi, September 10-14, 2007 ;  
organized by Yugoslav Materials Research  
Society, Faculty of Metallurgy and Tehnology,  
Podgorica and Institute of Technical Sciences  
of the Serbian Academy of Sciences and Arts,  
Belgrade ; [editor Dragan R. Uskoković]. -  
Belgrade : Institute of Technical Sciences  
of SASA, 2007 (Belgrade : Čigoja). - LI,  
202 str. : table ; 30 cm

Tiraž 300. - Registar.

ISBN 978-86-80321-11-0

1. Yugoslav Materials Research Society  
(Beograd) 2. Faculty of Metallurgy and  
Tehnology (Podgorica) 3. Institute of  
Technical Sciences of SASA (Beograd)  
а) Наука о материјалима - Апстракти б)  
Технички материјали - Апстракти  
COBISS.SR-ID 141931788

*P.S.E.25*

**EFFECT OF HYDROGELS BASED ON 2-HYDROXYETHYL METHACRYLATES TO VIABILITY AND OXIDATIVE ABILITY OF RAT PERITONEAL MACROPHAGES**

S. Najman<sup>1</sup>, M. Milojević<sup>2</sup>, S. Tomić<sup>3</sup>, P. Vasiljević<sup>2</sup>

<sup>1</sup>Faculty of Medicine, Institute of Biology and Human Genetics, Niš, Serbia

<sup>2</sup>Faculty of Science and Mathematics, Department of Biology and Ecology, Niš, Serbia

<sup>3</sup>Faculty of Technology and Metallurgy, Belgrade, Serbia

The aim of this study was to examine the effect of hydrogels different chemical construction and synthesized under different conditions to viability and oxidative ability of macrophages. The hydrogels are synthesized by radiation and chemical polymerization of 2-hydroxyethyl methacrylate (HEMA), copolymerization of HEMA with itaconic acid (IA), and copolymerization of HEMA, IA with poly (alkylene glycol) (met) acrylates - Bisomers. We used the cytotoxicity test to exam the viability and the chemiluminescent test by which was measurement the oxidative ability of rat macrophages. The oxidative ability of macrophages decreases in the presence of hydrogels. All of tested materials reduce the viability of macrophages. Degree of reduction of rat peritoneal macrophages viability is proportional with concentration of tested material.

*P.S.E.26*

**OSTEOGENIC ACTIVITY IN A MICE SUBCUTANEOUS IMPLANT OF POROUS HYDROXYAPATITE/POLY-L-LACTIDE LOADED WITH BONE MARROW CELLS**

J. Janičijević<sup>1</sup>, S. Najman<sup>2</sup>, N. Beljić<sup>2</sup>, M. Vukelić<sup>2</sup>, N. Ignjatović<sup>3</sup>, D. Uskoković<sup>3</sup>,  
Lj. Djordjević<sup>1</sup>, P. Vasiljević<sup>1</sup>

<sup>1</sup>Faculty of Science and Mathematics, Department of Biology and Ecology, Niš, Serbia

<sup>2</sup>Faculty of Medicine, Institute of Biology and Human Genetics, Niš, Serbia

<sup>3</sup>Institute of Technical Sciences of Serbian Academy of Sciences and Arts, Belgrade, Serbia

Hydroxyapatite (HAp) is biomaterial widely used in the regeneration of bone tissue. Addition of osteogenic cells to HAp implants may accelerate the bone repair process. The aim of this study was to investigate how the bone marrow cells (BMCs) loading of porous hydroxyapatite/poly-L-lactide (HAp/PLLA) act to ectopic osteogenesis. In this purpose HAp/PLLA with and without BMCs was subcutaneously implanted into BALB/c mice. As a control served implants from both types which weren't implanted. Three weeks after implantation, histological analysis of implants was done. It was observed significant resorption and induction of collagenogenesis in implanted biomaterials. The structure of new bone was seen in implants loaded with bone marrow cells.