

**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>

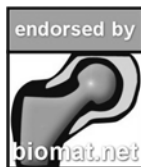
**Editor:** Prof. Dr. Dragan P. Uskoković

**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. : tabele ; 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.9

**PDLLA MICROPARTICLES CONTAINING BSA: EFFECT OF FORMULATION VARIABLES ON SIZE DISTRIBUTION**

I. Jovanović<sup>1</sup>, M. Petković<sup>1</sup>, B. Jordović<sup>2</sup>, N. Ignjatović<sup>1</sup>, D. Uskoković<sup>1</sup>

<sup>1</sup>Institute of Technical Science of SASA, Belgrade, Serbia,

<sup>2</sup>Faculty of Technical Sciences, Čačak, Serbia

Worldwide, there is currently considerable care for the development of biodegradable microspheres as systems for controlled release of medicaments. The major disadvantage of traditional administration routes of medicaments is the need for frequent repetition. Encapsulation has been proven to be an effective vehicle for the controlled delivery of various medicaments. The encapsulation efficiency and release kinetics of the medicaments have been found to be dependent upon the size of the microspheres synthesized. The aim of this study was to formulate microparticles from poly-dl-lactide (PDLLA) by modified precipitation method. Bovine serum albumin (BSA) was used as a model protein for encapsulation. The surfactant polyvinyl alcohol (PVA) was incorporated to increase encapsulation efficiency and to achieve PDLLA spheres with desired size. The main focus was to study the effect of co-solvent selection (methanol or ethanol), PVA concentration, chloroform-to-water ratio, the speed and time of homogenization and solvent removal rate on the properties of microparticles. The average size and morphology of microparticles varied substantially among these preparation conditions. An increase in stirring rate and time of homogenization and concentration of stabilizer agent were found to reduce moderately the size of microparticles. Other process parameters had limited influence on particle size.