

UNIVERZITET U NIŠU / UNIVERSITY OF NIS  
Tehnološki fakultet, Leskovac / Faculty of Technology, Leskovac

**ZBORNİK IZVODA RADOVA**  
**X SIMPOZIJUM**  
“SAVREMENE TEHNOLOGIJE I PRIVREDNI RAZVOJ”

**BOOK OF ABSTRACTS**  
**10<sup>th</sup> SYMPOSIUM**  
“NOVEL TECHNOLOGIES AND ECONOMIC  
DEVELOPMENT”

Leskovac, 22. i 23. Oktobar 2013.  
Leskovac, October, 22 - 23, 2013.

UNIVERZITET U NIŠU / UNIVERSITY OF NIS  
Tehnološki fakultet, Leskovac / Faculty of Technology, Leskovac

**ZBORNİK IZVODA RADOVA**  
X SIMPOZIJUM  
«SAVREMENE TEHNOLOGIJE I PRIVREDNI RAZVOJ»

**BOOK OF ABSTRACTS**  
10<sup>th</sup> SYMPOSIUM  
«NOVEL TECHNOLOGIES AND ECONOMIC  
DEVELOPMENT»

Leskovac, 22. i 23. oktobar 2013.  
Leskovac, October, 22-23, 2013.

Tehnološki fakultet / Faculty of Technology

Za izdavača: prof. dr Jovan Stepanović  
For the Publisher: Prof. Jovan Stepanović

Urednik: prof. dr Miodrag Lazić  
Editor: Prof. Miodrag Lazić

CIP – Каталогизacija у публикацији  
Народна библиотека Србије, Београд

6 (048)

**СИМПОЗИЈУМ „Савремене технологије и привредни развој“  
(10 ; 2013 ; Лесковац)**

Zbornik izvoda radova / X simpozijum „Savremene tehnologije i privredni razvoj“, Leskovac, 22. i 23. oktobar 2013. ; [organizator] Tehnološki fakultet, Leskovac ; [urednik Miodrag Lazić] = Book of Abstracts / 10th Symposium „Novel Technologies and Economic Development“, Leskovac, October [i.e. October], 22-23, 2013. ; [organized by] Faculty of Technology, Leskovac ; [editor Miodrag Lazić]. – Leskovac : Tehnološki fakultet = Faculty of Technology, 2013 (Leskovac : Troters). – 258 str. ; 25 cm

Izvodi radova na srp. i engl. jeziku. – Na vrhu nasl. str.: Univerzitet u Nišu = University of Nis. – Tiraž 190. – Registar.

ISBN 978-86-82367-98-7

1. Лазих, Миодраг [уредник] 2. Технолошки факултет (Лесковац)  
а) Технологија – Апстракти б) Технолошки прогрес – Привредни развој -  
Апстракти  
COBISS.SR-ID 201054988

Štampa / Print : Troters, Leskovac  
Tiraž / Printing : 190

Pripremila za štampu: Vesna Marinković  
Paging and graphical design: Vesna Marinković

X Simpozijum sa međunarodnim učešćem «Savremene tehnologije i privredni razvoj», Tehnološki fakultet, Leskovac, oktobar 2013. godine održava se pod pokroviteljstvom Ministarstva prosvete, nauke i tehnološkog razvoja Republike Srbije i donatorstvom Grada Leskovca i «Zdravlje Actavis», Leskovac.

10<sup>th</sup> Symposium with international participation «Novel Technologies and Economic Development», Faculty of Technology, Leskovac, October 2013, was also supported by the Ministry of Education, Science and Technological Development Republic of Serbia, as well as City of Leskovac and «Zdravlje Actavis», Leskovac.

X Simpozijum  
" Savremene tehnologije i privredni razvoj"

10<sup>th</sup> Symposium  
"Novel technologies and Economic  
Development"

Organizator  
Tehnološki fakultet, Leskovac

Organized by:  
Faculty of Technology, Leskovac

Naučni odbor Simpozijuma:

The Scientific Committee:

Ljubiša Nikolić, predsednik, Leskovac, Srbija  
Dragiša Savić, Leskovac, Srbija  
Vlada Veljković, Leskovac, Srbija  
Mihajlo Stanković, Leskovac, Srbija  
Milorad Cakić, Leskovac, Srbija  
Dušan Trajković, Leskovac, Srbija  
Dejan Marković, Leskovac, Srbija  
Dejan Skala, Beograd, Srbija  
Peđa Milosavljević, Niš, Srbija  
Zoltan Zavargo, Novi Sad, Srbija  
Miloš Sorak, Banja Luka, BiH  
Radoslav Grujić, Zvornik, BiH  
Tomas Gamse, Graz, Austrija  
Ivan Krakovski, Prag, Češka  
Ana Višnjevska Beker, Krakov, Poljska  
Goran Demboski, Skopje, BJRM  
Kiril Lisičkov, Skopje, Makedonija  
Nikolaos Solomakis, Tesalija, Grčka  
Milena Marjanović, Leskovac, Srbija

Ljubiša Nikolić, President, Leskovac, Serbia  
Dragiša Savić, Leskovac, Serbia  
Vlada Veljković, Leskovac, Serbia  
Mihajlo Stanković, Leskovac, Serbia  
Milorad Cakić, Leskovac, Serbia  
Dušan Trajković, Leskovac, Serbia  
Dejan Marković, Leskovac, Serbia  
Dejan Skala, Belgrade, Serbia  
Pedja Milosavljević, Niš, Serbia  
Zoltan Zavargo, Novi Sad, Serbia  
Miloš Sorak, Banja Luka, FBiH  
Radoslav Grujić, Zvornik, FBiH  
Tomas Gamse, Graz, Austria  
Ivan Krakovsky, Prag, Czech Republic  
Anna Wisnewska Beker, Krakov, Poland  
Goran Demboski, Skopje, Macedonia  
Kiril Lisičkov, Skopje, Macedonia  
Nikolaos Solomakis, Thessaly, Greece  
Milena Marjanović, Leskovac, Serbia

Organizacioni odbor Simpozijuma:

The Organizing Committee:

Jovan Stepanović, predsednik, Leskovac,  
Srbija  
Bojan Jović, Leskovac, Srbija  
Goran Cvetanović, Leskovac, Srbija  
Igor Denić, Leskovac, Srbija  
Goran Jović, Leskovac, Srbija  
Slaviša Stevanović, Leskovac, Srbija  
Miloš Terzić, Leskovac, Srbija  
Božidar Stojiljković, Leskovac, Srbija  
Žika Stojanović, Leskovac, Srbija  
Dragan Nikolić, Kruševac, Srbija  
Nebojša Ristić, Leskovac, Srbija  
Sreten Stojanović, Leskovac, Srbija  
Miodrag Lazić, Leskovac, Srbija  
Goran Nikolić, Leskovac, Srbija  
Staniša Stojiljković, Leskovac, Srbija  
Zoran Kostić, Leskovac, Srbija  
Dragan Pejić, Leskovac, Srbija

Jovan Stepanović, President, Leskovac,  
Serbia  
Bojan Jović, Leskovac, Serbia  
Goran Cvetanović, Leskovac, Serbia  
Igor Denić, Leskovac, Serbia  
Goran Jović, Leskovac, Serbia  
Slaviša Stevanović, Leskovac, Serbia  
Miloš Terzić, Leskovac, Serbia  
Božidar Stojiljković, Leskovac, Serbia  
Žika Stojanović, Leskovac, Serbia  
Dragan Nikolić, Kruševac, Serbia  
Nebojša Ristić, Leskovac, Serbia  
Sreten Stojanović, Leskovac, Serbia  
Miodrag Lazić, Leskovac, Serbia  
Goran Nikolić, Leskovac, Serbia  
Staniša Stojiljković, Leskovac, Serbia  
Zoran Kostić, Leskovac, Serbia  
Dragan Pejić, Leskovac, Serbia

## SADRŽAJ

<b>PLENARNA PREDAVANJA / PLENARY LECTURES</b>	<b>29</b>
<b>Dušan Jovanović, Miroslav Stanković, Jugoslav Krstić, Davor Lončarević, Vojkan Radonjić</b>	
NIKLOV HIDROGENACIONI KATALIZATOR – SINTEZA, REDUKCIJA PREKURSORA I TESTIRANJE KATALIZATORA	31
SUPPORTED NICKEL HYDROGENATION CATALYST – SYNTHESIS, PRECURSOR REDUCTION AND TESTING	32
<b>Živoslav Tešić, Dušanka Milojković-Opšenica, Maja Natić, Jelena Trifković, Silvio Kečkeš, Uroš Gašić</b>	
PRIMENA TEČNO-MASENE SPEKTROMETRIJE ZA ODREĐIVANJE AUTENTIČNOSTI HRANE	33
APPLICATION OF LIQUID-MASS SPECTROMETRY FOR FOOD AUTHENTICITY DETERMINATION	34
<b>SEKCIJSKA PREDAVANJA / SECTIONAL LECTURES</b>	<b>35</b>
<b>Dušan Mijin</b>	
ARILAZO PIRIDONSKE BOJE - SINTEZA I SVOJSTVA	37
ARYLAZO PYRIDONE DYES - SYNTHESIS AND PROPERTIES	38
<b>Nevijo Zdolec, Vesna Dobranić, Ivana Filipović, Dean Jankuloski, Pavle Sekulovski</b>	
ANTIMIKROBNA REZISTENCIJA STAFILOKOKA IZ TRADICIONALNIH FERMENTIRANIH KOBASICA I SIREVA OD PASTERIZIRANOG MLIJEKA	39
ANTIMICROBIAL RESISTANCE OF STAPHYLOCOCCI FROM TRADITIONAL FERMENTED SAUSAGES AND PASTEURIZED MILK CHEESES	40
<b>Marija Škrinjar, Sunčica Kocić-Tanackov, Vladislava Šošo</b>	
PRISUSTVO AFLATOKSINA U ŽITARICAMA I NJIHOV UTICAJ NA LJUDSKO ZDRAVLJE	41
PRESENCE OF AFLATOXINS IN CEREALS AND THEIR INFLUENCE ON HUMAN HEALTH	42
<b>Miodrag Zdujić</b>	
SINTEZA I MODIFIKACIJA NEORGANSKIH MATERIJALA MEHANOHEMIJSKIM TRETMANOM	43
SYNTHESIS AND MODIFICATION OF SOLID STATE MATERIALS BY MECHANOCHEMICAL TREATMENT	44
<b>Dragan Jocić</b>	
FUNKCIONALIZACIJA TEKSTILNIH MATERIJALA PRIMENOM POLIMERNIH SISTEMA OSETLJIVIH NA SPOLJNE STIMULANSE	45
FUNCTIONAL FINISHING OF TEXTILE MATERIALS WITH STIMULI- RESPONSIVE POLYMERIC SYSTEMS	46
<b>Žika Stojanović</b>	
UPRAVLJANJE LJUDSKIM RESURSIMA I NOVE TEHNOLOGIJE HUMAN RESOURCE MANAGEMENT AND NEW TECHNOLOGIES	47

**Poster / Posters**

**Vesna Savić, Jelena Lazarević, Aleksandra Đordjević, Ljiljana Stanojević, Vesna Nikolić**

ANTIMIKROBNA AKTIVNOST VODENOG EKSTRAKTA KORENA GAVEZA (*Symphythum officinalae*) DOBIJENOG SOXHLET EKSTRAKCIJOM  
THE ANTIMICROBIAL ACTIVITY OF THE AQUEOUS EXTRACT OF COMFREY ROOT (*Symphythum officinalae*) OBTAINED BY SOXHLET EXTRACTION

51

**Ivan Savić, Vesna Nikolić, Ljubiša Nikolić, Ivana Savić, Maja Jović**

ANTIOKSIDATIVNA AKTIVNOST EKSTRAKTA ZELENOG ČAJA  
THE ANTIOXIDANT ACTIVITY OF THE GREEN TEA EXTRACT

52

**Ivan Savić, Vesna Nikolić, Ljubiša Nikolić, Ivana Savić, Marko Jović**

IDENTIFIKACIJA BIOAKTIVNIH KOMPONENATA U EKSTRAKTU ZELENOG ČAJA  
THE IDENTIFICATION OF BIOACTIVE COMPOUNDS IN THE GREEN TEA EXTRACT

53

**Dragana Stanisavljević, Mihailo Ristić, Sofija Đorđević, Dragan Veličković, Novica Ranđelović, Branislav Zlatković**

ANALIZA ETARSKOG ULJA HERBE *Hyssopus officinalis* L.  
ANALYSIS OF ESSENTIAL OIL OF HERB OF *Hyssopus officinalis* L.

54

**Dragana Stanisavljević, Saša Stojičević, Sofija Đorđević, Ivana Karabegović, Dragan Veličković, Miodrag Lazić, Branislav Zlatković**

ANTIOKSIDATIVNA AKTIVNOST EKSTRAKTA HERBE *Artemisia alba* Turra  
THE ANTIOXIDANT ACTIVITY OF THE EXTRACTS OF THE HERB *Artemisia alba* Turra

55

**Snežana Matoš, Svetlana Pavičić, Ivan Samelak, Zoran Kukrić**

KINETIČKI MODEL ANTIOKSIDATIVNE AKTIVNOSTI ETANOLNOG EKSTRAKTA KOPRIVE (*Urtica dioica* L.) NA RAZLIČITIM TEMPERATURAMA

THE KINETIC MODEL OF THE ETHANOL NETTLE EXTRACT (*Urtica dioica* L.) ANTIOXIDANT ACTIVITY AT DIFFERENT TEMPERATURES

56

**Saša Savić, Katarina Vojinović, Andrija Šmelcerović, Živomir Petronijević**

KINETIKA OKSIDACIJE RUTINA POMOĆU PEROKSIDAZE IZ RENA  
THE KINETICS OF OXIDATION OF RUTIN BY HORSERADISH PEROXIDASE

57

**Saša Savić, Sandra Stojmenović, Mirjana Petronijević, Živomir Petronijević**

UKLANJANJE FENOLA POMOĆU PEROKSIDAZE IZ RENA  
PHENOL REMOVAL BY HORSERADISH PEROXIDASE

58

**Saša Stojičević, Ivana Karabegović, Dragan Veličković, Nada Nikolić, Miodrag Lazić**

THE ANTIOXIDATIVE ACTIVITY OF THE HOUSELEEK EXTRACTS: THE INFLUENCE OF THE POWER AND FREQUENCY OF ULTRASOUND

59

<b>Nada Nikolić, Jelena Stojanović, Gordana Stojanović, Goran Petrović, Saša Stojićević, Dušanka Kitić</b>	
SASTAV MASNIH KISELINA MEŠAVINE PŠENIČNOG I BRAŠNA PEČURKE <i>Boletus edulis</i>	
THE FATTY ACIDS COMPOSITION OF THE MIXTURE OF WHEAT AND MUSHROOM <i>Boletus edulis</i> FLOUR	60
<b>Jelena Stojanović, Nada Nikolić, Zoran Todorović, Ivana Karabegović, Dragan Veličković, Miodrag Lazić</b>	
SADRŽAJ LIPIDA I SASTAV ACILGLICEROLA MEŠAVINE PŠENIČNOG I BRAŠNA PEČURKE <i>Boletus edulis</i>	
THE LIPID CONTENT AND THE ACYLGLYCEROLS COMPOSITION OF THE MIXTURE OF WHEAT AND MUSHROOM <i>Boletus edulis</i> FLOUR	61
<b>Maja Vukašinović-Sekulić, Ljiljana Mojović, Marica Rakin, Maja Bulatović, Žaklina Tasić</b>	
AKTIVNOST PROBIOTSKIH BAKTERIJA U RAZLIČITIM VRSTAMA SIRNE SURUTKE	
THE ACTIVITY OF PROBIOTIC BACTERIA IN DIFFERENT TYPES OF CHEESE WHEYS	62
<b>Svetlana Popović, Nataša Lukić, Spasenija Milanović, Miodrag Tekić, Ivana Šijački</b>	
ULTRAZVUČNA REGENERACIJA FLUKSA MEMBRANE NAKON FILTRACIJE SURUTKE	
ULTRASOUND ENHANCED MEMBRANE CLEANING AFTER WHEY FILTRATION	63
<b>A. Zarubica, D. Marković, G. Nikolić, M. Randjelović, M. Momcilović, A. Bojić</b>	
MODIFIKOVANI POLJOPRIVREDNI NUSPROIZVODI KAO ADSORBENTI KATJONSKIH POLUTANATA IZ VODENIH RASTVORA	
MODIFIED AGRICULTURAL BY-PRODUCTS AS ADSORBENTS FOR CATIONIC POLLUTANTS FROM AQUEOUS SOLUTIONS	64
<b>Bojana Milićević, Bojana Danilović, Dragiša Savić</b>	
PROMENA MIKROBIOTE BAKTERIJA MLEČNE KISELINE TOKOM PROIZVODNJE PETROVAČKE KOBASICE U TRADICIONALNIM USLOVIMA	
THE CHANGES OF THE MICROBIOTA OF LACTIC ACID BACTERIA DURING THE TRADITIONAL PRODUCTION OF PETROVAC SAUSAGES	65
<b>Olivera Šimurina, Bojana Filipčev, Stevan Popov, Marija Bodroža-Solarov, Zvonko Nježić, Tamara Dapčević-Hadnađev, Jovana Brkljača</b>	
SINERGISTIČKI EFEKAT LIPAZE I KSILANAZE NA ELASTIČNOST PŠENIČNOG TESTA I KVALITET HLEBA	
THE SINERGISTIC EFFECT OF LIPASE AND XYLANASE ON THE ELASTICITY OF WHEAT DOUGH AND QUALITY OF BREAD	66
<b>Aleksandar Savić, Asima Davidović, Zoran Kukrić</b>	
UTICAJ RAZLIČITIH PREDFERMENTATIVNIH TRETMANA NA KVALITET VOĆNOG VINA JABUKE SORTE CRVENI DELIŠES	
THE EFFECTS OF DIFFERENT PREFERMENTATION TREATMENTS ON THE QUALITY OF RED DELICIOUS APPLE WINE	67



<b>Irina Mladenoska</b>	
THE PREVENTION OF POST-HARVEST LOSS OF THE BANANA FRUITS BY UTILIZATION OF COCONUT OIL-BEESWAX BASED EDIBLE COATINGS	68
<b>Irina Mladenoska, Igor Micovski</b>	
SPRAY DRYING AND SIMPLE ADSORPTION IN THE PREPARATION OF <i>ASPERGILLUS ORYZAE</i> $\beta$ -GALACTOSIDASE FOR THE APPLICATION IN UNCONVENTIONAL REACTION MEDIA	69
<b>Maja Bulatović, Marica Rakin, Maja Vukašinović-Sekulić, Ljiljana Mojović, Tanja Krunić</b>	
UTICAJ RAZLIČITIH SUPLEMENTATA NA PROBIOTSKI KARAKTER FERMENTISANOG NAPITKA NA BAZI SURUTKE THE EFFECT OF DIFFERENT SUPPLEMENTS ON THE PROBIOTIC CHARACTER OF FERMENTED WHEY- BASED BEVERAGE	70
<b>Pedja Milosavljević, Miloš Krstić, Dragan Pavlović, Milena Todorović</b>	
UPRAVLJANJE TEHNOLOGIJAMA U PROCESU INDUSTRIJSKE PROIZVODNJE KAJMAKA TECHNOLOGY MANAGEMENT IN THE PROCESS OF THE INDUSTRIAL PRODUCTION OF MILK CREAM	71
<b>Drago Sando, Željka Marjanović-Balaban, Radoslav Grujić, Meho Bašić, Zehra Gilić</b>	
UTICAJ USLOVA PROIZVODNJE NA MIKROBIOLOŠKU ISPRAVNOST MESA PUŽA THE INFLUENCE OF THE PRODUCTION CONDITIONS ON THE MICROBIOLOGICAL QUALITY OF THE SNAIL MEAT	72
<b>Radoslav Grujić, Goran Vučić, Slavica Grujić, Milan Vukić, Božana Odžaković</b>	
UTICAJ BILJNIH VLAKANA NA REOLOŠKA I SENZORNA SVOJSTVA FUNKCIONALNIH KOBASICA THE EFFECT OF VEGETABLE FIBERS ON THE RHEOLOGICAL AND SENSORY PROPERTIES OF FUNCTIONAL SAUSAGES	73
<b>Nebojša Milosavljević, Bojana Danilović, Dragiša Savić, Nataša Joković</b>	
THE CHANGE OF THE CONTENT OF ORGANIC ACIDS DURING THE RIPPENING OF PIROT'S KACHKAVAL PRODUCED FROM COW'S AND SHEEP'S MILK	74
<b>Biljana Damjanović-Vratnica</b>	
HEMIJSKI SASTAV I ANTIMIKROBNA AKTIVNOST ETARSKOG ULJA MUŠKATNE ŽALFIJE ( <i>Salvia sclarea</i> L.) THE CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY OF CLARY SAGE ESSENTIAL OIL ( <i>Salvia sclarea</i> L.)	75
<b>Biljana Damjanović-Vratnica</b>	
HEMIJSKI SASTAV ETARSKOG ULJA OBIČNOG BORA ( <i>Pinus sylvestris</i> L.) THE CHEMICAL COMPOSITION OF THE PINE ESSENTIAL OIL ( <i>Pinus sylvestris</i> L.)	76

<b>Marija Radojković, Zoran Zeković, Pavle Mašković</b> HEMIJSKI SASTAV I MOGUĆNOSTI UPOTREBE EKSTRAKATA LISTA DUDA THE CHEMICAL COMPOSITION AND HUMAN HEALTH BENEFITS OF MULBERRY LEAF EXTRACTS	77
<b>Biljana Stanković, Ljiljana Stanojević, Vesna Savić, Vesna Nikolić, Milorad Cakić</b> ANTIIRITANTNA AKTIVNOST ETARSKOG ULJA MIROĐIJE THE ANTI-IRITANT ACTIVITY OF ESSENTIAL OIL FROM DILL	78
<b>Ana Žugić, Sofija Đorđević, Vanja Tadić, Ivana Arsić, Dušan Mišić</b> ANTIMIKROBNA AKTIVNOST IZOLATA KORENA OMANA ANTIMICROBIAL ACTIVITIES OF ELECAMPANE ROOT ISOLATES	79
<b>Ivana Arsić, Vanja Tadić, Sofija Đorđević, Ana Žugić, Dušan Mišić</b> MIKROBIOLOŠKA AKTIVNOST EKSTRAKATA KLEKE ( <i>Juniperus communis</i> L.) I SREMUŠA ( <i>Allium ursinum</i> L.) THE ANTI MICROBIAL ACTIVITY OF JUNIPER ( <i>Juniperus communis</i> L.) AND RANSOM ( <i>Allium ursinum</i> L.) EXTRACTS	80
<b>Dragoljub Cvetković, Aleksandra Velićanski, Siniša Markov, Sonja Đilas, Dušica Matić</b> ANTIBAKTERIJSKA AKTIVNOST EKSTRAKTA TROPA KUPINE SORTE ČAČANKA THE ANTIBACTERIAL ACTIVITY OF THE BLACKBERRY POMACE EXTRACT FROM THE ČAČANKA CULTIVAR	81
<b>Ivana Lepojević, Žika Lepojević, Senka Vidović, Zoran Zeković, Vesna Nađalin</b> OPTIMIZACIJA EKSTRAKCIJE <i>Echinacea purpurea</i> L. U ODNOSU NA ANTIOKSIDATIVNU AKTIVNOST THE OPTIMIZATION OF <i>Echinacea purpurea</i> L. EXTRACTION WITH RESPECT TO THE ANTIOXIDANT ACTIVITY	82
<b>Vesna Nađalin, Žika Lepojević, Ivana Lepojević, Dušan Adamović</b> THE EXTRACTION AND ANTIOXIDANT ACTIVITY OF CULTIVATED LAVENDER ( <i>Lavandula officinalis</i> L.) EXTRACTS	83
<b>Aleksandra Cvetanović, Jaroslava Švarc-Gajić, Zoran Zeković, Dušan Adamović</b> THE MICROWAVE EXTRACTION OF PHENOLIC COMPOUNDS FROM CHAMOMILE LIGULATE FLOWERS	84
<b>Jaroslava Švarc-Gajić, Zorica Stojanović, Aleksandra Cvetanović</b> THE DETERMINATION OF FLUORIDES IN ROSEMARY ( <i>Rosmarinus officinalis</i> L.)	85
<b>Milica Marković, Siniša Markov, Dušanka Pejcin, Ljiljana Mojović, Jelena Pejcin, Maja Vukašinić, Aleksandra Đukić-Vuković</b> MLEČNOKISELINSKA FERMENTACIJA RAZLIČITIH ZAPREMINA DŽIBRE TRITIKALEA SA <i>Lactobacillus fermentum</i> PL-1 LACTIC ACID FERMENTATION BY <i>Lactobacillus fermentum</i> PL-1 USING A DIFFERENT VOLUME OF TRITICALE STILLAGE	86

<b>Sonja Đilas, Jasna Čanadanović-Brunet, Gordana Četković, Vesna Tumbas, Jelena Vulić, Slađana Stajčić</b> KAROTENOIDI I POLIFENOLI – BIOAKTIVNA JEDINJENJA U SUVOJ KAJSIJI CAROTENOIDS AND POLYPHENOLS - BIOACTIVE COMPOUNDS IN DRIED APRICOT	87
<b>Stefan Kuvendžiev, Kiril Lisičkov, Mirko Marinkovski, Dejan Dimitrovski</b> THE ISOLATION AND CHARACTERIZATION OF BIOACTIVE COMPOUNDS FROM COMMON CARP ( <i>Cyprinus carpio</i> L.)	88
<b>Ljiljana Stanojević, Mihajlo Stanković, Milorad Cakić, Dušica Ilić, Ljubiša Nikolić</b> UTICAJ OPERATIVNIH USLOVA I TEHNIKE EKSTRAKCIJE NA PRINOS, KINETIKU I SASTAV ETANOLNIH EKSTRAKATA IZ KORENA KOPRIVE ( <i>Urtica dioica</i> L.) THE INFLUENCE OF THE OPERATION CONDITIONS AND EXTRACTION TECHNIQUES ON THE YIELD, KINETICS AND COMPOSITION OF ETHANOL EXTRACTS FROM THE NETTLE ROOT ( <i>Urtica dioica</i> L.)	89
<b>Ljiljana Stanojević, Mihajlo Stanković, Aleksandar Zdravković, Vesna Nikolić, Ljubiša Nikolić</b> ANTIOKSIDATIVNA AKTIVNOST VODENO-ETANOLNIH EKSTRAKATA LISTA KOPRIVE ( <i>Urtica dioica</i> L.) THE ANTIOXIDANT ACTIVITY OF AQUEOUS-ETHANOLIC EXTRACTS FROM NETTLE LEAF ( <i>Urtica dioica</i> L.)	90
<b>Biljana Stanković, Ljiljana Stanojević, Niko Radulović, Vesna Nikolić, Dušica Ilić</b> ANALIZA SASTAVA ETARSKOG ULJA IZ SEMENA MIROĐIJE ( <i>Anethum graveolens</i> L.) DOBIJENOG RAZLIČITIM TEHNIKAMA HIDRODESTILACIJE THE COMPOSITION OF DILL SEEDS ( <i>Anethum graveolens</i> L.) ESSENTIAL OIL OBTAINED BY DIFFERENT HYDRODISTILLATION TECHNIQUES	91
<b>Venelin Hubenov, D. Denčev, Snezhanka Mihajlova, Ivan Simeonov</b> THE STUDY OF THE ANAEROBIC CO-DIGESTION OF SWINE MANURE, WASTED FRUITS AND VEGETABLES AND WHEAT STRAW	92
<b>Ivan Simeonov, Elena Chorukova, Snezhanka Mihaylova, Venelin Hubenov, Georgy Valevski</b> COMPUTERIZED SYSTEM FOR MONITORING AND CONTROL OF THE PILOT-SCALE BIOGAS PLANT	93
<b>Svetomir Milojević, Božidar Đorđević, Miljana Marković, Mihallo Ristić, Dejan Pilčević, Vladimir Pavićević</b> THE CHARACTERIZATION OF JUNIPER BERRY ( <i>Juniperus communis</i> L.) ESSENTIAL OIL FROM THE SIJERINSKA ŽUPA REGION	94
<b>Bojan Radović</b> ODREĐIVANJE OLOVA U KAŠASTIM VOĆNIM SOKOVIMA THE DETERMINATION OF LEAD IN NATURAL FRUIT JUICES	95

**SEKCIJA: ORGANSKE HEMIJSKE TEHNOLOGIJE**  
**SECTION: ORGANIC CHEMICAL TECHNOLOGY**

97

**Poster / Posters**

**Sanja Petrović, Saša Savić, Dejan Marković, Živomir Petronijević**

DEGRADACIJA HLOOROFILA *a* POMOĆU PEROKSIDAZE IZ RENA:  
IDENTIFIKACIJA PROIZVODA I UTICAJ TEMPERATURE  
DEGRADATION OF CHLOROPHYLL *a* BY HORSERADISH PEROXIDASE:  
THE IDENTIFICATION OF THE PRODUCTS AND TEMPERATURE  
INFLUENCE

99

**Sanja Petrović, Jelena Zvezdanović, Tatjana Anđelković,  
Dejan Marković**

DOBIJANJE FEOFITINA IZ BILJNOG MATERIJALA I PRIMENA HPLC  
HROMATOGRAFIJE, VIS I MASENE SPEKTROMETRIJSKE ANALIZE U  
NJEGOVOJ IDENTIFIKACIJI  
THE IDENTIFICATION OF PHEOPHYTIN OBTAINED FROM A PLANT  
MATERIAL BY HPLC-CHROMATOGRAPHY, VISIBLE AND MASS  
SPECTROSCOPY

100

**Ana Tačić, Emilija Jocić, Marija Toskić-Radojičić, Vesna Nikolić,  
Vesna Savić, Stevo Najman, Snežana Ilić-Stojanović**

DERIVATI CELULOZE U FORMULACIJAMA ORALNIH GELOVA SA  
GLUKOZOM I SAHAROZOM  
DERIVATIVES OF CELULOSE IN FORMULATIONS OF ORAL GELS WITH  
GLUCOSE AND SUCROSE

101

**Vesna Savić, Ivana Arsić, Milica Stanković, Ana Tačić, Vesna Nikolić**  
DUGOTRAJNA IN-VIVO STUDIJA O UTICAJU GELA SA EKSTRAKTOM  
GAVEZA (*Symphythum officinalae*) NA VLAŽNOST KOŽE

LONG TERM *IN VIVO* STUDY OF THE EFFECT OF THE GEL WITH  
COMFREY EXTRACT (*Symphythum officinalae*) ON SKIN HYDRATION

102

**Dragan Cvetković, Jelena Stanojević, Ljiljana Stanojević, Zoran Ilić,  
Ljubomir Šunić**

ODREĐIVANJE SADRŽAJA  $\beta$ -KAROTENA U KORENU ŠARGAREPE  
PRIMENOM HPLC METODE  
THE DETERMINATION OF THE  $\beta$ -CAROTENE CONTENT IN CARROT  
ROOT USING HPLC METHOD

103

**Marijana Ačanski, Đura Vujić, Zvonko Nježić**

RETENTION AND LIPOPHILICITY OF ESTRONE DERIVATIVES IN  
NORMAL AND REVERSED PHASES OF HIGH PERFORMANCE LIQUID  
CHROMATOGRAPHY

104

**Anita Radovniković, Martin Danaher, Marijana Ačanski,  
Ljiljana Petrović, Branislav Šojić**

RESIDUE ANALYSES OF NITROFURAN METABOLITES IN ANIMAL  
PLASMA BY APPLYING UHPLC-MS/MS- SUPPORT TO DOMESTIC MEAT  
INDUSTRY

105

<b>Mejra Bektašević, Emira Kahrović</b> IR I UV/VIS KARAKTERIZACIJA SINTETIZIRANOG Ru(III) SALICILALDEHIDATO KOMPLEKSA IR AND UV/VIS CHARACTERIZATION OF THE SYNTHESIZED Ru(III) SALICYLALDEHYDATO COMPLEX	106
<b>Sandra Konstantinović, Slavica Ilić, Jovan Ćirić, Dragiša Savić, Vlada Veljković, Gordana Gojgić-Cvijović</b> UTICAJ SCHIFF-ovih BAZA NA PRODUKCIJU ANTIBIOTIKA POMOĆU BAKTERIJE <i>Streptomyces hygroscopicus</i> THE EFFECT OF SCHIFF BASES ON THE ANTIBIOTIC PRODUCTION BY BACTERIA <i>Streptomyces hygroscopicus</i>	107
<b>Sandra Konstantinović, Slavica Ilić, Jovan Ćirić, Dragiša Savić, Vlada Veljković, Gordana Gojgić-Cvijović</b> UTICAJ DERIVATA 5-CHLOROISATINA NA PRODUKCIJU ANTIBIOTIKA POMOĆU <i>Streptomyces hygroscopicus</i> THE EFFECT OF 5-CHLOROISATINE DERIVATIVES ON THE ANTIBIOTIC PRODUCTION BY BACTERIA <i>Streptomyces hygroscopicus</i>	108
<b>Elvisa Hodžić, Halid Makić, Sebila Rekanović, Mejra Bektašević</b> TEORIJSKO ISTRAŽIVANJE OKSIDACIJE MELATONINA SA TAURINOM THEORETICAL STUDIES OF MELATONIN OXIDATION WITH TAURINE	109
<b>Ivana Kostić, Tatjana Anđelković, Ružica Nikolić, Danica Milojković, Aleksandar Bojić, Darko Anđelković</b> INTERAKCIJA Zn(II) JONA SA HUMINSKOM KISELINOM I MODELIMA HUMINSKIH SUPSTANCI THE INTERACTION OF Zn(II) ION WITH HUMIC ACID AND HUMIC- MODEL LIGANDS	110
<b>Milan Momčilović, Danijela Maksin, Aleksandra Nastasović, Antonije Onjia</b> ADSORPCIJA IMIDAKLOPRIDA NA AKTIVNOM UGLJU DOBIJENOM KARBONIZACIJOM BOROVE ŠIŠARKE IMIDACLOPRID ADSORPTION ONTO ACTIVATED CARBON OBTAINED FROM PINE CONES	111
<b>Milan Momčilović, Danijela Maksin, Aleksandra Nastasović, Antonije Onjia</b> UKLANJANJE KARBOFURANA IZ VODENIH SISTEMA ADSORPCIJOM NA KARBONIZOVANOJ BOROVOJ ŠIŠARCI THE REMOVAL OF CARBOFURAN FROM WATER SYSTEMS BY ADSORPTION ONTO CARBONIZED PINE CONES	112
<b>Staniša Stojiljković, Ivana Savić, Aleksandar Došić, Ivan Savić</b> UTICAJ BENTONITNE GLINE NA STEPEN BUBRENJA SKROBNOG HIDROGELA THE EFFECT OF BENTONITE CLAY ON THE SWELLING DEGREE OF STARCH HYDROGEL	113

<b>Suzana Cakić, Ivan Ristić, Dragan Stojiljković, Jakov Stamenković</b> UTICAJ SASTAVA MEKIH SEGMENTA NA PERFORMANSE NETOKSIČNIH BIORAZGRADIVIH POLIURETANSKIH ELASTOMERA THE EFFECT OF THE SOFT SEGMENT COMPOSITION ON THE PROPERTIES OF NON-TOXIC BIODEGRADABLE POLYURETHANES ELASTOMER	114
<b>Nevena Vukić, Ivan Ristić, Milena Marinović-Cincović, Branka Pilić, Suzana Cakić, Jaroslava Budinski-Simendić</b> SINTEZA KOMPOZITA POLI(LAKTID)/VIŠESLOJNE UGLJENIČNE NANOCEVI POLIMERIZACIJOM U RASTVORU THE SYNTHESIS OF POLY(LACTIDE)/MULTIWALLED CARBON NANOTUBES COMPOSITES BY SOLUTION POLYMERISATION	115
<b>Vesna Simendić, Mirjana Jovičić, Jelena Pavličević, Milorad Ninković, Oskar Bera, Radmila Radičević</b> MODIFIKACIJA EPOKSIDNIH SMOLA TERMOPLASTIČNIM POLIURETANIMA NA OSNOVU POLIKARBONATNOG DIOLA THE MODIFICATION OF EPOXY RESINS BY ADDITION OF THERMOPLASTIC POLYCARBONATE-BASED POLYURETHANES	116
<b>Mirjana Jovičić, Radmila Radičević, Jelena Pavličević, Oskar Bera</b> PRAĆENJE UMREŽAVANJA SMEŠA HIPERRAZGRANATIH ALKIDA I MELAMINSKIH SMOLA POMOĆU REOMETRA RHEOMETRIC ANALYSIS OF CURING OF HYPERBRANCHED ALKYD AND MELAMINE MIXTURES	117
<b>Oskar Bera, Jelena Pavličević, Mirjana Jovičić, Branka Pilić</b> UTICAJ POVRŠINE RAZLIČITIH NANOČESTICA NA KINETIKU RADIKALNE POLIMERIZACIJU U MASI SISTEMA MMA/NANOPUNILA I NASTAJANJE MEĐUFAZNOG SLOJA THE EFFECT OF THE DIFFERENT PARTICLES SURFACE ON FREE RADICAL BULK MMA/NANOFILLER POLYMERIZATION KINETICS AND THE FORMATION OF THE INTERFACIAL LAYER	118
<b>Jelena Pavličević, Milena Špírková, Mirjana Jovičić, Oskar Bera, Branka Pilić, Jaroslava Budinski-Simendić, Sebastian Baloš</b> SINTEZA I KARAKTERIZACIJA SVOJSTAVA POLIURETANSKIH ELASTOMERA OJAČANIH NANOČESTICAMA SILICIJUM(IV)OKSIDA THE SYNTHESIS AND CHARACTERIZATION OF POLYURETHANE ELASTOMERS REINFORCED WITH SILICA NANOPARTICLES	119
<b>Snežana Ilić-Stojanović, Ljubiša Nikolić, Vesna Nikolić, Jakov Stamenković, Slobodan Petrović, Ana Ćirić, Ivana Mladenović-Ranisavljević</b> BUBRENJE INTELIGENTNIH GELOVA U RAZLIČITIM SREDINAMA I KARAKTERIZACIJA SWELLING OF INTELLIGENT GELS IN DIFFERENT MEDIA AND CHARACTERIZATION	120

<b>Snežana Ilić-Stojanović, Ljubiša Nikolić, Vesna Nikolić, Jela Milić, Slobodan Petrović, Ana Ćirić, Ivana Mladenović-Ranisavljević</b> KONTROLISANO OTPUŠTANJE FENACETINA IZ INTELIGENTNIH GELOVA U SIMULIRANIM FIZIOLOŠKIM USLOVIMA CONTROLLED RELEASE OF PHENACETIN FROM INTELLIGENT GELS UNDER SIMULATED PHYSIOLOGICAL CONDITIONS	121
<b>Gordana Marković, Milena Marinović-Cincović, Vojislav Jovanović, Suzana Samaržija-Jovanović, Jaroslava Budinski-Simendić</b> STARENJE NR/SBR/CSM ELASTOMERA POD UTICAJEM GAMA ZRAČENJA GAMMA IRRADIATION AGING OF NR/SBR/CSM ELASTOMERIC MATERIALS	122
<b>Suzana Samaržija-Jovanović, Vojislav Jovanović, Milena Marinović-Cincović, Gordana Marković</b> KORELACIJA IZMEĐU MEHANIČKIH SVOJSTAVA I PRIVIDNE ENERGIJE AKTIVACIJE OWT GUMENIH SMEŠA SA RAZLIČITIM PREKURSORIMA MREŽE CORRELATION BETWEEN MECHANICAL PROPERTIES AND APPARENT ACTIVATION ENERGY OF OWT RUBBER COMPOUNDS BASED ON DIFFERENT PRECURSOR NETWORKS	123
<b>Aco Janevski, Gordana Bogoeva – Gaceva</b> CRYSTALIZATION OF $\beta$ -NUCLEATED iPP IN MODEL COMPOSITES WITH GLASS FIBRES	124
<b>Dimko Dimeski, Vineta Srebrenkoska</b> THE OPTIMIZATION OF FIBER-REINFORCED BACKPANEL AS A SUBSTRATE FOR CERAMIC/COMPOSITE BALLISTIC INSERTS FOR PERSONAL PROTECTION	125
<b>Dimko Dimeski, Gordana Bogoeva-Gaceva, Vineta Srebrenkoska</b> THE IMPLEMENTATION OF FULL FACTORIAL EXPERIMENTAL DESIGN IN PREDICTING THE BALLISTIC STRENGTH OF GLASS FIBER/PHENOLIC COMPOSITES	126
<b>B. Cekova, V. Markoska</b> TERMAL IR – RESARCH OF MODIFED NaY ZEOLITE WITH CITRIC AND LACTIC ACID	127
<b>Sofija Rančić, Snežana Đorić-Veljković, Predrag Janković</b> PRIMENA POLIMETILMETAKRILATA U PROIZVODNJI OPTIČKIH VLAKANA ZA SPECIFIČNE NAMENE THE Polymethylmethacrylate APPLICATION IN THE PRODUCTION OF A SPECIFIC OPTICAL FIBRE	128
<b>Vojkan Miljković, Ljubiša Nikolić, Goran Nikolić, Ivana Arsić, Vesna Savić, Milica Stanković</b> THE INTERACTION OF METRONIDAZOLE WITH OTHER MEDICINES	129

<b>Vojkan Miljković, Ljubiša Nikolić, Goran Nikolić, Danica Dimitrijević, Saša Randelović</b>	
SASTAV, ANTIOKSIDATIVNA I ANTIMIKROBNA AKTIVNOST EKSTRAKATA BELOG DUDA ( <i>Morus alba</i> L.)	
THE COMPOSITION, ANTIOXIDATIVE AND ANTIMICROBICAL ACTIVITY OF FRESH FRUIT EXTRACTS OF ( <i>Morus alba</i> L.)	130
<b>Dušica Ilić, Vesna Nikolić, Ljubiša Nikolić, Milorad Cakić, Ljiljana Stanojević, Ivana Mladenović-Ranisavljević</b>	
PRIMENA FT-IR SPEKTROSKOPIJE ZA ODREĐIVANE STABILNOSTI SINTETISANOG ALIL-TIOSULFINATA	
THE APPLICATION OF FT-IR SPECTROSCOPY IN DETERMINING THE STABILITY OF THE SYNTHESIZED ALLYL-THIOSULFINATE	131
<b>Zoran Todorović, Nada Nikolić, Vanja Todorović, Jelena Marjanović, Miodrag Lazić</b>	
THE VALIDATION OF HPLC METHOD FOR THE DETERMINATION OF ETHANOL AND ISOPROPANOL IN THE ANTIBACTERIAL GEL	132
<b>Vanja Todorović, Slađana Šobajić, Zoran Todorović, Nada Nikolić, Jasmina Timić, Jelena Slavković</b>	
THE IMPACT OF ALKALIZATION ON THE CAFFEINE AND THEOBROMINE CONTENTS OF COMMERCIAL COCOA POWDERS	133
<b>Slobodan Glišić, Milorad Cakić, Goran Nikolić</b>	
FIZIČKO-HEMIJSKA ANALIZA KOMPLEKSA KARBOKSIMETILDEKSTRANA SA RAZLIČITIM BIOMETALIMA	
PHYSICO-CHEMICAL ANALYSIS OF CARBOXYMETHYLDEXTRAN COMPLEXES WITH DIFFERENT BIOMETALS	134
<b>Saša Zlatković, Dragiša Đokić, Dragana Marković, Goran Nikolić</b>	
ODREĐIVANJE TEŠKIH METALA U BILJNIM INFUZIMA	
HEAVY METALS DETERMINATION IN HERBAL INFUSIONS	135
<b>Goran Nikolić, Žarko Mitić, Emilija Ljubisavljević, Milica Kostić</b>	
PROUČAVANJE ADSORPCIJE MOKRAĆNE KISELINE IZ VODENIH RASTVORA NA AKTIVNOM UGLJU I ALUMINIJUM OKSIDU	
THE STUDY OF URIC ACID ADSORPTION FROM AQUEOUS SOLUTIONS ON ACTIVATED CARBON AND ALUMINIUM OXIDE	136
<b>Perica Pešić, Marija Lazarević</b>	
SINTEZA 1,4-BIS-(2-AMINO-4-TIAZOLIL)-BENZENA	
THE SYNTHESIS 1,4-BIS-(2-AMINO-4-THIAZOLYL)-BENZENE	137
<b>Milutin Milosavljević, Milan Milosavljević, Dušan Mijin, Slobodan Petrović</b>	
SINTEZA SIMETRIČNIH I NESIMETRIČNIH TIUREA IZ IZOTIOCIJANATA DOBIJENOG U PROIZVODNJI TETRAMETILTURAMMONOSULFIDA	
THE SYNTHESIS OF SYMMETRICAL AND UNSYMMETRICAL THIOUREAS FROM ISOTHIOCYANATE OBTAINED IN THE PRODUCTION OF TETRAMETHYLTHIURAMMONOSULFIDE	138



<b>Jelena Stanojević, Dejan Marković, Jelena Zvezdanović</b>	
SUZBIJANJE ANTIOKSIDACIONE AKTIVNOSTI KVERCETINA PREMA LIPIDIMA POMOĆU BENZOFENONA POD REŽIMOM UV-B OZRAČIVANJA	
BENZOPHENONE SUPPRESSION OF THE QUERCETIN ANTIOXIDANT ACTIVITY TOWARDS LIPIDS UNDER UV-B IRRADIATION REGIME	139
<b>Zora Stoilković, Milka Jadranin, Svetlana Đurić, Slobodan Petrović, Milka Avramov Ivić, Dušan Mijin</b>	
ANALIZA DEGRADACIONIH PROIZVODA AMLODIPIN-BEZILATA PRIMENOM TEČNE HROMATOGRAFIJE I TEČNE HROMATOGRAFIJE-MASENE SPEKTROMETRIJE U USLOVIMA FORSIRANE I POTPUNE DEGRADACIJE	
THE INVESTIGATION OF FORCED AND TOTAL DEGRADATION PRODUCTS OF AMLODIPINE BESYLATE BY LIQUID CHROMATOGRAPHY AND LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY	140
<b>Zora Stoilković, Vladislava Jovanović, Dušan Mijin, Vesna Nikolić, Ljubiša Nikolić, Slobodan Petrović, Milka Avramov Ivić</b>	
ELEKTROHEMIJSKA ANALIZA INKLUZIONIH KOMPLEKSA NIFEDIPINA I AMLODIPINA SA $\beta$ -CIKLODEKSTRINOM I 2-HIDROKSIPROPIL- $\beta$ -CIKLODEKSTRINOM	
THE ELECTROCHEMICAL INVESTIGATION OF INCLUSION COMPLEXES OF NIFEDIPINE AND AMLODIPINE WITH $\beta$ -CYCLODEXTRIN AND 2-HYDROXYPROPYL- $\beta$ -CYCLODEXTRIN	141
<b>Vesna Nikolić, Ljubiša Nikolić, Milorad Cakić, Dušica Ilić, Ljiljana Stanojević, Ljiljana Takić</b>	
SINTEZA I KARAKTERIZACIJA FEROGUKONATA	
THE SYNTHESIS AND CHARACTERIZATION OF IRON(II) GLUCONATE	142
<b>Marija Jovanović, Sandra Konstantinović, Slavica Ilić, Vlada Veljković</b>	
GREEN SYNTHESIS OF HYDRAZONES	143
<b>Balčaković Dragana, Manjenčić Darko, Aleksić Vojislav, Petrović Zoran, Vukić Nevena, Budinski-Simendić Jaroslava</b>	
SINTEZA ZVEZDASTIH POLILAKTID POLIOLA NA OSNOVU OBNOVLJIVIH SIROVINA MIKROTALASNIM POSTUPKOM	
THE SYNTHESIS OF STAR-SHAPED POLYLACTIDE POLYOLS BASED ON RENEWABLE RESOURCES BY THE MICROWAVE PROCEDURE	144
<b>SEKCIJA: HEMIJSKO INŽENJERSTVO</b>	
<b>SECTION: CHEMICAL ENGINEERING</b>	<b>145</b>
<b>Poster / Posters</b>	
<b>Ivana Banković-Ilić, Zoran Todorović, Ivica Stamenković, Vlada Veljković</b>	
UTICAJ TETRAHIDROFURANA NA PRINOS METIL ESTARA MASNIH KISELINA U REAKTORU SA VIBRACIONOM MEŠALICOM	
THE EFFECT OF TETRAHYDROFURAN ON FATTY ACID METHYL ESTERS YIELD IN A RECIPROCATING PLATE REACTOR	147

<b>Nataša Lukić, Ivana Šijački, Svetlana Popović, Aleksandar Jokić, Dragan Petrović</b>	
UTICAJ DODATKA ALKOHOLA NA ZAPREMINSKI KOEFICIJENT PRENOSA MASE U BARBOTAŽNOJ KOLONI SA KONCENTRIČNOM CEVI THE EFFECT OF ALCOHOL ADDITION ON VOLUMETRIC MASS TRANSFER IN A DRAFT TUBE AIR-LIFT REACTOR	148
<b>Ivana Šijački, Nataša Lukić, Svetlana Popović, Bojana Ikonić, Dragan Petrović</b>	
BRZINA TEČNOSTI I VREME CIRKULACIJE U BARBOTAŽNOJ KOLONI SA KONCENTRIČNOM CEVI I RASTVORIMA ALKOHOLA DOWNCOMER LIQUID VELOCITY AND CIRCULATION TIME IN A DRAFT TUBE AIRLIFT REACTOR WITH ALCOHOL SOLUTIONS	149
<b>Olivera Stamenković, Ana Veličković, Milan Kostić, Nataša Joković, Vlada Veljković</b>	
HOMOGENA BAZNO-KATALIZOVANA METANOLIZA ULJA SEMENA KONOPLJE HOMOGENEOUS BASE-CATALYZED METHANOLYSIS OF HEMPSEED OIL	150
<b>Milan Kostić, Nataša Joković, Olivera Stamenković, Vlada Veljković</b>	
EKSTRAKCIJA ULJA IZ SEMENA KONOPLJE ( <i>Cannabis sativa</i> L.) HEMPSEED ( <i>Cannabis sativa</i> L.) OIL EXTRACTION	151
<b>Miloš Kostić, Jelena Mitrović, Miljana Radović, Radomir Ljupković, Maja Stanković, Danijela Bojić, Aleksandar Bojić</b>	
BIOSORPCIJA JONA HROMA KSANTOVANOM KOROM <i>Lagenaria Vulgaris</i> BIOSORPTION OF Cr(III) IONS BY XANTHATED <i>LAGENARIA VULGARIS</i> SHELL	152
<b>Svetlana Popović, Dragica Jovičević, Nataša Lukić, Aleksandar Jokić, Bojana Ikonić</b>	
UNAPREĐENJE MIKROFILTRACIJE MLEKA PROMOCIJOM TURBULENCIJE STATIČKOM METODOM THE ENHANCEMENT OF MILK MICROFILTRATION BY PROMOTING TURBULENCE USING A STATIC METHOD	153
<b>Irena Mickova, Ljubomir Arsov</b>	
THE DETERMINATION OF THE SURFACE WATERS INFLOW IN BIG PRESPIA LAKE	154
<b>Ljiljana Takić, Ivica Stamenković, Nenad Živković, Nataša Elezović</b>	
THE OPTIMAL DOSAGE OF COAGULANTS DURING THE OPERATION OF WTP "GORINA" LESKOVAC	155
<b>Gordana Bogoeva – Gaceva, Aco Janevski</b>	
KINETICAL AND THERMODYNAMICAL PARAMETARS OF CRYSTALLIZATION OF iPP NUCLEATED WITH MIXED $\alpha$ -NUCLEATORS	156
<b>Rodoljub Čučulović, A. Čučulović, D. Veselinović, T. Đekić</b>	
NIVOI AKTIVNOSTI $^{137}\text{Cs}$ , $^{40}\text{K}$ , $^{226}\text{Ra}$ I $^{232}\text{Th}$ U MAHOVINAMA IZ OKOLINE LESKOVCA THE ACTIVITY LEVELS OF $^{137}\text{Cs}$ , $^{40}\text{K}$ , $^{226}\text{Ra}$ I $^{232}\text{Th}$ IN THE MOSS FROM THE LESKOVAC AREA	157

<b>Ivana Mladenović-Ranisavljević, Ljiljana Takić, Vesna Nikolić, Ljubiša Nikolić, Predrag Ranisavljević</b> PROCENA ZAGAĐENOSTI VODE DUNAVA PRIMENOM VIŠEKRITERIJUMSKE ANALIZE THE ASSESSMENT OF THE DANUBE WATER POLLUTION IN MULTICRITERIA ANALYSIS	158
<b>Arianit Reka, Blagoj Pavlovski, Blagica Cekova</b> SPECIAL CERAMICS BASED ON PARTIALLY STABILIZED ZrO <sub>2</sub>	159
<b>Snežana Đorić-Veljkić, Momčilo Kocić, Ranđelović Dejan, Antić Ljubomir</b> OPTIČKA VLAKNA KAO MEDIJUM ZA PRENOŠENJE DNEVNE SVETLOSTI THE TRANSMISSION OF DAYLIGHT THROUGH THE OPTICAL FIBER MEDIUM	160
<b>Marija Tasić, Olivera Stamenković, Vlada Veljković</b> SIMULACIJA PROIZVODNJE BIODIZELA: UTICAJ ENERGETSKE INTEGRACIJE NA EKONOMIJU PROCESA THE SIMULATION OF THE BIODIESEL PRODUCTION: THE INFLUENCE OF HEAT INTEGRATION ON THE PROCESS ECONOMICS	161
<b>Pedja Milosavljević, Milena Todorović, Dragan Pavlović</b> PRIMENA ALATA KVALITETA U PROCESU VODOSNABDEVANJA GRADA NIŠA THE APPLICATION OF QUALITY TOOLS IN THE PROCESS OF WATER SUPPLY OF THE CITY OF NIŠ	162
<b>Milena Stanković</b> THE INFLUENCE OF TIME AND pH VALES ON THE REMOVAL OF Cu <sup>2+</sup> IONS FROM WATER BASED ON THE SORBENT EAR OF CORN	163
<b>Liljana Ranđelović, Nenad Živković, Ljiljana Takić</b> MONITORING OTPADNIH VODA SPECIFIČNIH KORISNIKA KANALIZACIJE GRADA LESKOVCA WASTEWATER DATA MONITORING OF THE WASTE WATER SEWER SPECIFIC USERS IN THE CITY OF LESKOVAC	164
<b>Liljana Ranđelović, Nenad Živković, Ljiljana Takić</b> PROCENA EKOLOŠKOG RIZIKA REKE VETERNICE OD PRISUSTVA AMONIJAKA U OTPADNIM VODAMA GRADA LESKOVCA THE ASSESSMENT OF THE ECOLOGICAL RISK FOR THE RIVER VETERNICA CAUSED BY THE PRESENCE OF AMMONIA FROM THE WASTE WATER OF THE CITY OF LESKOVAC	165
<b>Milena Jovanović, Nenad Živković, Ljiljana Živković, Miomir Raos</b> THE AMBIENT AIR QUALITY MONITORING WITH THE PORTABLE STATION "AIRPOINTER"	166
<b>Nenad Živković, Ljiljana Živković, Miomir Raos, Nikola Mišić</b> THE WEB APPLICATION – LOCAL REGISTER SOURCES OF THE POLLUTION	167
<b>B. Cekova, B. Pavlovski, V. Markoska, A. Reka</b> THE ABSORTION CHARACTER OF ZEOLITES, TYPE 4A, DERIVED NATURAL RAW TREPSEL BITOLA R. MACEDONIA	168

<b>Marija Miladinović, Olivera Stamenković, Vlada Veljković</b> METANOLIZA SUNCOKRETOVOG ULJA U REAKTORU SA NEPOKRETNIM SLOJEM NEGAŠENOG KREČA THE QUICKLIME-CATALYZED METHANOLYSIS OF THE SUNFLOWER OIL IN A PACKED BED REACTOR	169
<b>Bojana Ikonić, Aleksandar Jokić, Zoltan Zavargo, Svetlana Popović, Nataša Lukić</b> UNAPREĐENJE PROCESA MIKROFILTRACIJE SUSPENZIJA SKROBA KORIŠĆENJEM STATIČKOG MEŠAČA THE ENHANCING MICROFILTRATION OF STARCH SUSPENSIONS BY USING A STATIC MIXER	170
<b>Aleksandar Jokić, Bojana Ikonić, Zoltan Zavargo, Nataša Lukić, Svetlana Popović</b> KONCENTRISANJE SUSPENZIJA PEKARSKOG KVASCA PRIMENOM MIKROFILTRACIJE SA MULTIKANALNOM KERAMIČKOM MEMBRANOM MICROFILTRATION IN THE CONCETRATE MODE OF BAKER'S YEAST SUSPENSIONS THROUGH THE MULTICHANNEL CERAMIC MEMBRANE	171
<b>Milena Miljković, Milica Petrović, Aleksandar Bojić, Jovan Stepanović, Dragan Đorđević</b> UTICAJ KONCENTRACIJE POMOĆNOG ELEKTROLITA NA UKLANJANJE BOJE CRYSTAL VIOLET ELEKTROHEMIJSKOM OKSIDACIJOM NA PLATINSKOJ ANODI INFLUENCE OF THE BACKGROUND ELECTROLYTE CONCENTRATION ON THE REMOVAL OF CRYSTAL VIOLET BY ELECTROCHEMICAL OXIDATION ON THE PLATINUM ANODE	172
<b>Bratislav Todorović, Ljubiša Nikolić, Staniša Stojiljković, Maja Stanković, Pavle Premović</b> GEOHEMIJA Au U IIIB SMEKTITU RIBLJE GLINE (STEVNS KLINT, DANSKA) GEOCHEMISTRY OF Au IN THE IIIB SMECTITE FROM FISH CLAY	173
<b>Bratislav Todorović, Nebojša Mitić, Dragan Stojiljković, Dragan Đorđević, Pavle Premović</b> POREKLO Ni I Zn U IIIB KEROGENU RIBLJE GLINE (STEVNS KLINT, DANSKA) THE ORIGIN OF Ni AND Zn IN THE IIIB KEROGEN FROM THE FISH CLAY (STEVNS KLINT, DENMARK)	174
<b>Sofija Rančić, Snežana Nikolić-Mandić, Aleksandar Bojić, Snežana Đorić-Veljković</b> ODREĐIVANJE Co(II) U RASTVORU THE DETERMINATION OF Co(II) IN THE SOLUTION	175
<b>Milica Jović, Dalibor Stanković, Ivan Anđelković, Aleksandar Nikolić, Goran Petković</b> ELECTROCHEMICAL DEGRADATION OF <i>Reactive Blue 52</i> USING Zn, Ni AND Ti ELECTRODE	176
<b>Irena Mickova</b> THE INVESTIGATION OF VALVE METAL ELECTRODES AS n-TYPE SEMICONDUCTORS	177

**Stanko Žerajić**

KOMPARATIVNA ANALIZA FERMENTACIJE ETANOLA U HEMOSTATU I KOLONI SA NEPOKRETNIM SLOJEM IMOBILISANOG BIODOKALIZATORA  
THE COMPARATIVE ANALYSIS OF ETHANOLIC FERMENTATION IN CHEMOSTAT AND THE COLUMN WITH FIXED BED IMMOBILIZED BIODOCALYST 178

**Stanko Žerajić**

KORIŠĆENJE SIMULATORA PROCESA ZA NAPREDNO UČENJE OPTIMALNOG DIZAJNA EKSPERIMENTA  
THE USE OF THE PROCESS SIMULATORS FOR ADVANCED LEARNING OF OPTIMAL DESIGN OF EXPERIMENTS 179

**Sabina Begić, Zoran Petrović, Vojislav Aleksić, Vladan Mičić, Zoran Iličković, Fahrudin Salihović**

OPTIMIZACIJA BRZOG PJEŠČANOG FILTRA ZA PROCESE UKLANJANJA MANGANA IZ VODE  
THE OPTIMIZATION OF THE RAPID SAND FILTER FOR THE PROCESSES OF REMOVING MANGANESE FROM WATER 180

**Vladimir Pavićević, Darko Radosavljević, Marina Stamenović, Bojan Radović, Ivan Kluz**

CHALLENGES OF THE WATER MANAGEMENT IN A SUSTAINABLE DEVELOPMENT OF THE REPUBLIC OF SERBIA 181

**A. Čehajić, I. Šišić, J. Ibrahimpašić, R. Šahinović**

THE IMPLEMENTATION MODEL OF THE INTEGRATED COMMUNAL WASTE MANAGEMENT FOR THE BIHAĆ REGION (BIH) 182

**Nebojša Mitić, Dragan Stojiljković, Bratislav Todorović, Staniša Stojiljković, Predrag Milanović**

GEOTERMALNA ENERGIJA SIJARINSKE BANJE I DEBRCA, MOGUĆNOSTI ISKORIŠĆAVANJA I PRIMENE  
GEOTHERMAL ENERGY FROM SIJARINSKA SPA AND DEBRC, THE POSSIBILITY OF USE AND APPLICATION 183

**SEKCIJA: TEKSTILNE TEHNOLOGIJE****SECTION: TEXTILE TECHNOLOGY 185****Poster / Posters****Radica Ničić, Dragan Đorđević**

EFIKASNOST DORADE PAMUČNE TKANINE PROTIV ZAPALJIVOSTI  
THE EFFICIENCY OF COTTON FABRIC FINISHING AGAINST FLAMMABILITY 187

**Radica Ničić, Dragan Đorđević**

ADSORPCIONO PONAŠANJE AZO BOJE PREMA PAMUČNOJ PREDI  
THE ADSORPTION BEHAVIOUR OF THE AZO DYE TO COTTON YARN 188

**Suzana Đorđević, Nebojša Ristić, Ivanka Ristić, Dragan Đorđević**

NEKI ASPEKTI OPTIMIZACIJE PROCESA IZRADE FROTIR TKANINE  
SOME ASPECTS OF THE OPTIMIZATION PROCESS OF TERRY CLOTH PRODUCTION 189

<b>Slaviša Stojmenović, Dragan Đorđević, Miodrag Šmelcerović</b> OPTIMIZACIJA BOJENJA VUNENE TKANINE REAKTIVNOM BOJOM THE OPTIMIZATION OF THE WOOL FABRIC DYEING WITH A REACTIVE DYE	190
<b>Slaviša Stojmenović, Miodrag Šmelcerović, Dragan Đorđević</b> DEKOLORIZACIJA OTPADNE VODE POSLE BOJENJA VUNENOG TEKSTILA WASTE WATER DECOLORIZATION AFTER WOOL DYEING	191
<b>Dragan Stojiljković, Jovan Stepanović, Dragan Đorđić, Dušan Trajković</b> MODELOVANJE ISTEZANJA NETKANIH GEOTEKSTILNIH MATERIJALA MODELING OF ELONGATION OF NONWOVEN GEOTEXTILE MATERIALS	192
<b>Jovan Stepanović, Dragan Đorđić, Miodrag Stamenković, Dušan Trajković</b> ANALIZA MEHANIČKIH KARAKTERISTIKA NETKANIH GEOTEKSTILNIH MATERIJALA THE ANALYSIS OF MECHANICAL PROPERTIES OF NONWOWEN GEOTEXTILE MATERIALS	193
<b>Sonja Jordeva, Sonja Čortoševa</b> THE INFLUENCE OF THE RAW MATERIAL CONTENT AND STRUCTURAL CHARACTERISTICS OF INTERLOCK DOUBLE LAYERED KNITTED FABRICS ON THE PHYSICO-MECHANICAL PROPERTIES	194
<b>Snežana Stanković, Dušan Popović, Goran Poparić</b> EFEKAT KONČANJA PREĐA NA NEKA SVOJSTVA KOMFORA THE EFFECT OF YARN FOLDING ON SOME COMFORT PROPERTIES	195
<b>Milada Novaković, Matejka Bizjak, Snežana Stanković</b> UTICAJ STRUKTURE PREĐE NA PROPUSTLJIVOST VODENE PARE GLATKIH PLETENINA THE INFLUENCE OF THE YARN STRUCTURE ON WATER VAPOR PERMEABILITY OF PLAIN KNITTED FABRICS	196
<b>Marija Savić, Tatjana Šarac, Miodrag Stamenković, Dušan Trajković, Nataša Radmanovac, Petar Stojanović</b> UTICAJ TEHNOLOŠKIH PARAMETARA POSTUPKA TEKSTURIRANJA SA LAŽNIM UPREDANJEM NA KARAKTERISTIKE KOVRDŽAVOSTI POLIAMIDNIH TEKSTURIRANIH PREĐA THE INFLUENCE OF TECHNOLOGICAL PARAMETERS OF THE TEXTURING PROCEDURE WITH FALSE TWIST ON CRIMP CHARACTERISTICS OF POLYAMID TEXTURED YARNS	197
<b>Marija Savić, Petar Stojanović, Dušan Trajković, Tatjana Šarac, Nataša Radmanovac, Miodrag Stamenković</b> ZAVISNOST MEHANIČKIH KARAKTERISTIKA POLIAMIDNIH TEKSTURIRANIH PREĐA OD PARAMETARA PROCESA TEKSTURIRANJA LAŽNIM UPREDANJEM THE DEPENDENCE OF MECHANICAL CHARACTERISTICS OF POLYAMID TEXTURED YARNS ON FALSE TWIST TEXTURING PROCESS PARAMETERS	198

<b>Petar Stojanović, Marija Savić, Miodrag Stamenković, Dušan Trajković, Jovan Stepanović, Tatjana Šarac</b> MEHANIČKE KARAKTERISTIKE POLIESTERSKIH TEKSTURIRANIH PREĐA POSTUPKOM LAŽNOG UPREDANJA NA MAŠINI „FTF 15“SA KRATKOM ZONOM ZAGREVANJA MECHANICAL CHARACTERISTICS OF POLYESTER TEXTURED YARNS BY THE FALSE-TWIST PROCEDURE ON A “FTF 15” MACHINE WITH THE SHORT WARMING ZONE	199
<b>Vojislav Gligorijević, Jovan Stepanović, Nenad Ćirković, Petar Stojanović</b> FIZIČKE OSOBINE I MODELOVANJE POPREČNO PLETENE STRUKTURE PHYSICAL PROPERTIES AND MODELING OF CROSS KNITTED STRUCTURE	200
<b>Dušan Trajković, Marina Mitić, Nenad Ćirković, Tatjana Šarac, Nataša Radmanovac</b> DIZAJN I PROJEKTOVANJE KOLEKCIJE HALJINA I TUNIKA OD PLETENINA RAZLIČITIH PREPLETAJA THE DESIGN AND PROJECTING OF DRESSES AND TUNICS COLLECTION FROM DIFFERENT TYPES OF KNITWEAR INTERLACE	201
<b>Dušan Trajković, Jovan Stepanović, Dragan Radivojević, Vasilije Petrović</b> ISPREDIVOST MEŠAVINE PAMUČNIH I PES VLAKANA NA ROTORSKIM PREDILICAMA SPINNABILITY OF COTTON AND PES FIBERS BLEND ON ROTOR SPINNING MACHINE	202
<b>Vasilije Petrović, Jovan Stepanović, M. Stanković, L. Orza</b> ANALIZA DIMENZIONE STABILNOSTI PRI PRANJU SIROVIH PAMUČNIH PLETENINA THE ANALYSIS OF DIMENSIONAL STABILITY OF RAW COTTON KNITTED FABRICS DURING THE WASHING PROCESS	203
<b>Vasilije Petrović, Jovan Stepanović, M. Stanković, L. Orza</b> ANALIZA DIMENZIONE STABILNOSTI BOJENIH PAMUČNIH PLETENINA THE ANALYSIS OF THE DIMENSIONAL STABILITY OF DYED COTTON KNITTED FABRICS	204
<b>Dragan Radivojević, Miodrag Stamenković, Jovan Stepanović, Dušan Trajković</b> STRUKTURNE I PREKIDNE KARAKTERISTIKE TWO-PLY PREĐA STRUCTURAL AND BREAKING CHARACTERISTICS TWO-PLY YARNS	205
<b>Ivanka Ristić, Suzana Đorđević, Dragan Đorđević, Nebojša Ristić</b> POVRŠINSKE KARAKTERISTIKE I SVOJSTVA BOJENJA PAMUČNE TKANINE OBRADENE NEJONOGENIM TENZIDOM SURFACE CHARACTERISTICS AND DYEING PROPERTIES OF THE COTTON FABRIC TREATED BY A NONONIC SURFACTANT	206

<b>Tanja Nikolić, Jovana Milanović, Ana Kramar, Živomir Petronijević, Mirjana Kostić</b>	
UTICAJ PERJODATNE OKSIDACIJE NA SORPCIONA SVOJSTVA VIZKOZNIH VLAKANA	
THE INFLUENCE OF PERIODATE OXIDATION ON SORPTION PROPERTIES OF VISCOSE FIBERS	207
<b>Ana Kramar, Biljana Dojčinović, Katarina Mihajlovski, Bratislav Obradović, Milorad Kuraica, Mirjana Kostić</b>	
ANTIBAKTERIJSKA AKTIVNOST VIZKOZNE TKANINE MODIFIKOVANE PLAZMOM NA ATMOSFERSKOM PRITISKU I JONIMA SREBRA	
THE ANTIBACTERIAL ACTIVITY OF THE VISCOSE FABRIC MODIFIED WITH THE ATMOSPHERIC PRESSURE PLASMA AND SILVER IONS	208
<b>Elena Tomovska, Koleta Zafirova</b>	
THE CONTRIBUTION OF FIBRE COUNT ON PHYSICAL AND MECHANICAL PROPERTIES OF WOVEN FABRICS	209
<b>Snežana Urošević</b>	
TEHNOLOGIJA I ZNAČAJ INOVACIJA ZA POSTIZANJE KONKURENTSKE PREDNOSTI DOMAĆIH KOMPANIJA TEKSTILNE INDUSTRIJE	
TECHNOLOGY AND IMPORTANCE OF INNOVATION FOR ACHIEVING A COMPETITIVE ADVANTAGE OF DOMESTIC TEXTILE COMPANIES	210
<b>Snežana Urošević</b>	
KREATIVNOST I INOVACIJE- KOMPONENTE USPEŠNOG POSLOVANJA PRIVREDNIH SUBJEKATA	
CREATIVITY AND INNOVATION-BUSINESS COMPONENTS OF SUCCESSFUL ECONOMIC ENTITIES	211
<b>Milena Miljković, Sonja Randelović, Miodrag Stamenković, Jovan Stepanović, Dragan Đorđević</b>	
UTICAJ FLUORESCENTNOG SREDSTVA ZA BELJENJE TECOWHITE AC NA STEPEN BELINE PLETENINE OD PAMUKA	
THE INFLUENCE OF THE TECOWHITE AC FLUORESCENT BRIGHTENER ON THE DEGREE OF WHITENESS OF THE KNITTED COTTON FABRIC	212
<b>Igor Jordanov, Vesna Dimova, Biljana Mangovska, Emilija Tošić</b>	
DYEING OF COTTON WITH CURCUMA LONGA USING DIFFERENT MORDANTS	213
<b>Marta Nedanovska-Boceva, Igor Jordanov, Biljana Mangovska</b>	
CHARACTERISTICS OF DIFFERENTLY PREPARED COTTON GARMENTS DYED WITH PIGMENTS	214
<b>Goran Demboski, M. Jankoska</b>	
THE EFFECT OF THE WOVEN FABRIC STRUCTURE VARIATION ON THE FABRIC HAND	215
<b>Goran Demboski, M. Jankoska</b>	
THE INFLUENCE OF THE SEWING PARAMETERS VARIATION ON THE NEEDLE THREAD CONSUMPTION	216
<b>Sonja Jordeva, Elena Tomovska, Dušan Trajković, Koleta Zafirova</b>	
THE INVESTIGATION ON APPAREL WASTE MANAGEMENT IN MACEDONIA	217



**Miloš Sorak, Miroslav Dragić**

ISTRAŽIVANJE MOGUĆNOSTI POVEĆANJA EFEKTIVNOSTI I  
EFIKASNOSTI TEKSTILNIH PREDUZEĆA PRIMJENOM METODA  
SIMULACIJE PRILIKOM DONOŠENJA UPRAVLJAČKIH ODLUKA  
THE RESEARCH OF THE POSSIBILITY OF INCREASING THE  
EFFECTIVENESS AND EFFICIENCY OF TEXTILE ENTERPRISES USING  
SIMULATION METHODS IN DECISION-MAKING 218

**Maja Stojanović, Srđan Cakić, Vladimir Stanković, Zoran Kostić,  
Marija Savić**

CRNO BELI KONTRAST KAO INSPIRACIJA ZA SAVREMENU KOLEKCIJU  
HALJINA OD PAMUĆNE TKANINE  
A BLACK AND WHITE CONTRAST AS THE INSPIRATION FOR THE  
MODERN DRESS COLLECTION OF COTTON FABRICS 219

**Dragana Grujić, Simona Jevšnik, Svjetlana Janjić, Danijela Jokanović**

TERMOFIZIOLOŠKA UDOBNOST ODJEĆE ZA ATLETIČARE U  
ZAVISNOSTI OD VRSTE MATERIJALA I STEPENA POKRIVENOSTI KOŽE  
THERMOPHYSIOLOGICAL COMFORT OF CLOTHING DEPENDING ON  
THE TYPE OF MATERIALS AND THE DEGREE OF THE SKIN COVERAGE 220

**SEKCIJA: SICIJALNO-EKONOMSKE IMPLIKACIJE NOVIH  
TEHNOLOGIJA**

**SECTION: SOCIAL AND ECONOMIC IMPLICATION OF NOVEL  
TECHNOLOGIES 221**

**Usmena izlaganja / Oral Presentations**

**Milena Marjanović, Ivan Mihailović**

INFORMACIONI SISTEM KAO PODLOGA STRATEŠKOG ODLUČIVANJA  
THE INFORMATION SYSTEM AS A BASIS FOR STRATEGIC DECISION-  
MAKING 223

**Ivan Mihailović, Dragana Ranđelović, Dragan Stojanović**

RAČUNARSKI RAČUNOVODSTVENI INFORMACIONI SISTEM  
PREDUZEĆA U PROCESU FINANSIJSKOG IZVEŠTAVANJA  
THE ACCOUNTING INFORMATION SYSTEM IN THE COMPANY  
FINANCIAL REPORTING 224

**Milena Marjanović, Valentina Stanković**

FORMIRANJE FUNKCIJE TRAJNJE POMOĆU REGRESIJE ANALIZE  
THE FORMATION OF THE DEMAND FUNCTION BY USING THE  
REGRESSION ANALYSIS 225

**Dragan Stojanović, Ognjen Dimitrijević, Ljubica Janjić**

PRIMENA SAVREMENIH INFORMACIONIH TEHNOLOGIJA  
U IZRADI I ANALIZI FINANSIJSKIH IZVEŠTAJA  
THE APPLICATION OF MODERN INFORMATION TECHNOLOGIES  
IN THE DEVELOPMENT AND ANALYSIS OF FINANCIAL STATEMENTS 226

<b>Dragan Stojanović</b>	
INFORMACIONE TEHNOLOGIJE U OSIGURAVAJUĆIM KOMPANIJAMA U SAVREMENIM USLOVIMA POSLOVANJA	
THE INFORMATION TECHNOLOGY IN INSURANCE COMPANIES IN THE MODERN BUSINESS ENVIRONMENT	227
<b>Dragan Stojanović, Ognjen Dimitrijević, Ljubica Janjić, Kristina Spasić</b>	
PRIMENA SAVREMENIH INFORMACIONIH TEHNOLOGIJA U IZRADI I ANALIZI FINANSIJSKIH IZVEŠTAJA	
THE APPLICATION OF MODERN INFORMATION TECHNOLOGIES IN THE DEVELOPMENT AND ANALYSIS OF FINANCIAL STATEMENTS	228
<b>Mira Avramović, Slavica Popović</b>	
MARKETING I VISOKE TEHNOLOGIJE	
MARKETING AND HIGH TECHNOLOGY	229
<b>Mira Avramović</b>	
UTICAJ TEHNOLOGIJE NA RAZVOJ PROCESA MARKETING KOMUNICIRANJA	
THE IMPACT OF TECHNOLOGY ON THE DEVELOPMENT PROCESS OF MARKETING COMMUNICATION	230
<b>Dragana Ranđelović, Tanja Spasić</b>	
UTICAJ INFORMACIONE TEHNOLOGIJE NA PROCES INTERNE REVIZIJE U SAVREMENIM USLOVIMA POSLOVANJA PREDUZEĆA	
THE IMPACT OF THE INFORMATION TECHNOLOGY ON THE INTERNAL AUDIT PROCESS UNDER THE MODERN BUSINESS CONDITION	231
<b>Jasmina Jović</b>	
UTICAJ INFORMACIONIH TEHNOLOGIJA NA RAD TURISTIČKIH AGENCIJA	
THE IMPACT OF THE INFORMATION TECHNOLOGY ON WORK TRAVEL AGENCIES	232
<b>Tatjana Đekić, Rodoljub Čučulović, Saša Đekić</b>	
KONTROLA RAZVOJA TURISTIČKIH PROIZVODA U USLOVIMA SAVREMENOG OKRUŽENJA	
THE CONTROL OF THE DEVELOPMENT OF TOURISM PRODUCTS IN CONTEMPORARY ENVIRONMENTS	233
<b>Tatjana Đekić, Miroslava Stojanović</b>	
TURISTIČKA USLUGA KAO KRITERIJUM ZA KONTROLU TURISTIČKE PONUDE	
THE TRAVEL SERVICE AS A CRITERION FOR THE CONTROL OF THE TOURISM OFFER	234
<b>Miroslava Stojanović, Miljana Stojković, Saša Đekić</b>	
MARKETING POSREDSTVOM DRUŠTVENIH MEDIJA U OBLASTI TURIZMA	
MARKETING THROUGH SOCIAL MEDIA IN TOURISM	235
<b>Jelena Krstić-Randić, Žarko Anđelković, Teodora Đorđević</b>	
TEHNOLOŠKE INOVACIJE KAO PRODUKTI ZNANJA I KREATIVNOSTI	
TECHNOLOGICAL INNOVATIONS AS THE PRODUCT OF KNOWLEDGE AND CREATIVITY	236

<b>Žika Stojanović, Toma Dašić</b>	
POTENCIJALI PRIMENE SAVREMENIH EKOLOŠKI PRIHVATLJIVIH TEHNOLOGIJA U CILJU POVEĆANJA EFIKASNOSTI POSLOVANJA ZELENE ZONE U LESKOVACU	
A POTENTIAL APPLICATION OF MODERN ENVIRONMENTALLY FRIENDLY TECHNOLOGIES FOR INCREASING THE BUSINESS EFFICIENCY OF THE GREEN ZONE IN LESKOVAC	237
<b>Žika Stojanović, Bojan Sešel</b>	
MODEL PODRŠKE NOVIM INVESTITORIMA ZA OČUVANJE RADNIH MESTA I PROIZVODNJE U SLUČAJU STEČAJA VELIKIH KOMPANIJA U SLOVENIJI	
THE MODEL FOR SUPPORTING NEW INVESTORS TO KEEP JOBS AND THE PRODUCTION IN CASE OF BANKRUPTCY OF LARGE COMPANIES IN SLOVENIA	238
<b>Anton Vorina, Božidar Veljković</b>	
THE SATISFACTION OF GUESTS IN HOTELS FROM THE POINT OF VIEW OF THE POSSIBILITY TO ACCESS INFORMATION ON THE COMPUTER (WIRELESS)	239
<b>Predrag Ranisavljević, Jovica Cvetković, Ivana Mladenović-Ranisavljević</b>	
KONKURENTNOST MALIH I SREDNJIH PREDUZEĆA U PERIODU TRANZICIJE	
THE COMPETITIVENESS OF SMALL AND MEDIUM ENTERPRISES DURING TRANSITION	240
<b>Predrag Radovanović</b>	
SOCIJALNO–EKONOMSKE IMPLIKACIJE NOVIH TEHNOLOGIJA U BANKARSTVU	
SOCIO–ECONOMIC IMPLICATIONS OF NEW TECHNOLOGIES IN BANKING	241
<b>Jasmina Jović, Iva Stanojević</b>	
STRATEGIJA STANDARDIZACIJE ILI PRILAGOĐAVANJA KOMPANIJE COCA-COLA	
THE STANDARDIZATION OR THE ADAPTATION STRATEGY OF COCA- COLA	242
<b>Valentina Stanković</b>	
PROBLEMI OBILASKA – HAMILTONOVI I EULEROVI PUTEVI	
ROUTING PROBLEMS – HAMILTONIAN AND EULERIAN CIRCUITS	243
<b>Mile Bogdanović</b>	
SAVREMENI ASPEKTI ULOGE MARKETINGA I MENADŽMENTA U SAGLEDAVANJU POSLOVNOG OKRUŽENJA	
MODERN ASPECTS OF THE ROLE OF MARKETING AND MANAGEMENT IN THE BUSINESS ENVIRONMENT	244
<b>Mile Bogdanović</b>	
POSLOVNO POVEZIVANJE U FUNKCIJI RASTA I RAZVOJA PRIVREDE	
BUSINESS CONNECTION AS THE FUNCTION OF GROWTH AND ECONOMIC DEVELOPMENT	245

<b>Saša Sarić, Žaklina Anđelković</b> KORPORATIVNE UPRAVE I MENADŽMENT RIZIKA CORPORATIVE MANAGEMENT AND RISK MANAGEMENT	246
<b>Saša Sarić, Žaklina Anđelković</b> NOVI PRISTUP MERENJA KREDITNOG RIZIKA NEW APPROACHES TO CREDIT RISK	247
<b>Dragomir Radovanović</b> „KLAUDIJE“ STIL U RUKOVOĐENJU I NJEGOVE EKONOMSKO– SOCIJALNE IMPLIKACIJE „CLAUDIUS“ MANAGEMENT STYLE AND ITS SOCIO–ECONOMIC IMPLICATIONS	248
<b>Naume Marinovski</b> THE IMPLICATIONS OF HACCP STANDARDS ON THE RURAL DEVELOPMENT OF TOURISM	249
<b>Miroslava Stojanović, Miljana Stojković, Saša Đekić</b> MOGUĆNOST PROMOCIJE TURIZMA PUTEM MOBILNIH APLIKACIJA THE POSSIBILITY OF PROMOTING TOURISM THROUGH MOBILE APPLICATIONS	250
<b>INDEKS AUTORA / AUTHOR INDEX</b>	<b>251</b>

## KINETICAL AND THERMODYNAMICAL PARAMETERS OF CRYSTALLIZATION OF iPP NUCLEATED WITH MIXED $\alpha$ -NUCLEATORS

**Gordana Bogoeva – Gaceva<sup>1</sup>, Aco Janevski<sup>2</sup>**

<sup>1</sup>University “Cyril and Methodius”, Faculty of Technology and Metallurgy, Skopje, Macedonia

<sup>2</sup>University “Goce Delčev”, Faculty of Technology, Štip, Macedonia

It is well known that the presence of a solid surface (substrate) in the contact with thermoplastic polymers during the crystallization from the melt generally favors the heterogeneous nucleation.

Isothermal and nonisothermal crystallization of isotactic polypropylene (iPP) nucleated with 0.1 %wt. talc (average dimension of 20  $\mu\text{m}$ ) (assign. PPT), 0.1 % wt. calcite (average dimension of 5  $\mu\text{m}$ ) (assign. PPC) and polymer nucleated with 0.1 % wt. talc plus 0.1 % wt. calcite (assign. PPTC) were studied to evaluate the different nucleation behavior of individual nucleators and their mixture. The nucleated systems were prepared on Brabender PL 2000, by melt-mixing at 460 K. Morphological analyses of the obtained iPP was done by the wide-angle x-ray diffraction and the polarizing light microscopy.

The crystallization behavior was studied by Perkin-Elmer DSC-7 in isothermal ( $T_c=391$ -403 K) and nonisothermal regime (applying cooling rate of 1,3,5,10,15 and 20 K/min). Induction times of crystallization were estimated, and from the Avrami plots which were linear for all systems, crystallization rate constants and coefficients were calculated. From the Hoffmann- Weeks plot, the equilibrium melting temperature was determined, and the lowest value was found for iPP nucleated with talc ( $T_m^{\circ}$  was 447.6 K; for iPP nucleated with calcite  $T_m^{\circ} = 462.3$  K, and for iPP nucleated with the mixture of nucleators  $T_m^{\circ} = 453.6$  K. The peaks of nonisothermal crystallization were moved to higher temperatures or lower supercooling,  $\Delta T$ . The best nucleation activity exhibited the system with talc, which was unexpected because the highest content of nucleators was used in the system with both nucleators. These findings were confirmed by other thermodynamic parameters such as a dimension of a critical nucleus, the nucleation density (the highest value determined for this system) and  $\theta$ -parameter (the lowest value of 0.35), which implies that the interaction between the polymer and the substrate is the highest in this system.

# KINETIC AND THERMODYNAMIC PARAMETERS OF CRYSTALLIZATION OF iPP NUCLEATED WITH MIXED $\alpha$ -NUCLEATORS

Gordana Bogoeva – Gaceva<sup>1</sup>,  
Aco Janevski<sup>2</sup>

<sup>1</sup>University "Sts. Cyril and Methodius", Faculty of Technology and Metallurgy, Skopje, Macedonia  
<sup>2</sup>University "Goce Delcev", Faculty of Technology, Stip, Macedonia

## Introduction

The addition of nucleating agents is widely applied method to modify morphology and crystallization kinetics of thermoplastic polymers. Among the inorganic fillers for isotactic polypropylene (iPP), such as mica, calcium carbonate, clays etc., talc is known as a very effective nucleator for  $\alpha$ -crystalline phase. Recently, mixed nucleators for iPP are tested as a means to modify polymer morphology and overall mechanical properties.

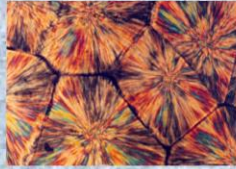


Figure 1. Polarizing optical micrograph of PT illustrating typical  $\alpha$ -spherulites grown at given  $T_c$ .

assignment	content
PP	iPP
PT	iPP + 0.1 % mass talc
PC	iPP + 0.1 % mass calcite
PTC	iPP + 0.1 % mass talc + 0.1 % mass calcite

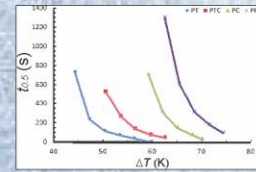


Figure 2. Dependence of the half-time of crystallization ( $t_{0.5}$ ) for PP, PT, PC and PTC samples on  $\Delta T_c$ .

## Objective

The aim of the present work is to examine the influence of the talc and calcite and their mixture on:

- crystallization kinetics of polypropylene and
- energetic parameters of crystallization.

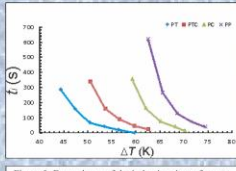


Figure 3. Dependence of the induction time of crystallization ( $t_i$ ) for PP, PT, PC and PTC samples on  $\Delta T_c$ .

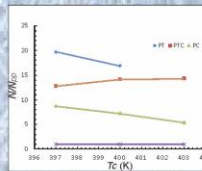


Figure 4. Dependence of the nucleation density for nucleated polymers ( $N$ ) over the one for the neat iPP ( $N_{iPP}$ ) on  $T_c$ .

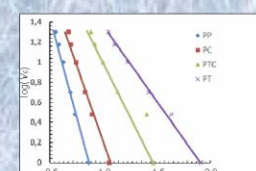


Figure 5. Dependence of the rate of crystallization ( $V_c$ ) on  $(\Delta T)^2$ .

## Experimental and materials

Commercial grade iPP with a weight-average molecular weight,  $M_w=150\ 500$ , as determined by GPC, and a polydispersity index,  $M_w/M_n=6.36$  was used.  $\alpha$ -nucleated iPP was obtained by mixing 0.1 %wt. talc (PT), calcite (PC) and their mix (PTC) with iPP in Brabender PL 2000 at 460 K. Isothermal and nonisothermal crystallizations of nucleated iPP was analyzed by DSC. In isothermal regime, the sample was rapidly heated to 478 K and held in the molten state for 5 min, to erase the thermal history of the polymer. Then the sample was cooled to a given crystallization temperature,  $T_c$  with a cooling rate of 80 K/min. Isothermal crystallization was carried out at  $T_c$  until crystallization was completed. The crystallization under nonisothermal conditions was performed by cooling at different cooling rates: 1, 3, 5, 10, 15, and 20 K/min.

Table II. Avrami index  $n$  and overall kinetic constant  $k$  at different crystallization temperature,  $T_c$ .

$T_c$	PP		PT		PC		PTC	
	$n$	$k$ ( $s^{-n}$ )	$n$	$k$ ( $s^{-n}$ )	$n$	$k$ ( $s^{-n}$ )	$n$	$k$ ( $s^{-n}$ )
391	3.4	$7.81 \times 10^3$	3.6	$5.98 \times 10^3$	3.7	$1.48 \times 10^4$	3.6	$6.2 \times 10^3$
384	2.6	$3.35 \times 10^4$	3.4	$1.84 \times 10^3$	3.1	$7.18 \times 10^3$	3.4	$2.2 \times 10^3$
397	2.6	$1.28 \times 10^4$	3.0	$2.43 \times 10^3$	2.9	$1.95 \times 10^3$	3.3	$4.2 \times 10^3$
400	2.5	$3.84 \times 10^3$	3.2	$8.78 \times 10^3$	2.7	$5.16 \times 10^3$	3.2	$6.2 \times 10^3$
403	2.6	$2.72 \times 10^3$	/	/	2.5	$2.74 \times 10^4$	2.9	$3.2 \times 10^3$

Table III. Surface Energy  $\sigma_e$ , Equilibrium Melting Temperature  $T_m$ ,  $\gamma$  and  $\theta$  Constant

$T_c$ (K)	PP	PT	PC	PTC
$\sigma_e \times 10^3$ (J/m <sup>2</sup> )	465.7	447.6	482.3	483.6
$\gamma$	208.9	116.7	193	140.1
$\theta$	2.33	4.38	2.41	2.71
$\theta$	1	0.35	0.80	0.52

## Conclusions

The obtained results from isothermal and non-isothermal crystallization of nucleated iPP have shown that (i) the nucleation density of talc-nucleated iPP is higher than in the polymer nucleated with calcite and mix of the both nucleators. This finding is clearly confirmed by the values for the crystal fold surface energy (controlling the lamellae growth) and the equilibrium melting temperature determined for the systems.



*University of Nis*  
*Faculty of Technology, Leskovac*



## **X SYMPOSIUM**

Novel technologies and economic development  
with international participation  
*22<sup>nd</sup> and 23<sup>rd</sup> October 2013.*

# **CERTIFICATE OF PARTICIPATION**

Scientific and Organizing Committee of X Symposium  
herewith confirm that the paper titled

**KINETICAL AND THERMODYNAMICAL PARAMETARS  
OF CRYSTALLIZATION OF IPP NUCLEATED WITH  
MIXED  $\alpha$ -NUCLEATORS**

By the authors:

**Gordana Bogoeva – Gaceva, Aco Janevski**

Was presented at the 10<sup>th</sup> Symposium  
*23<sup>rd</sup> October 2013.*

President of the Scientific Committee

dr Ljubiša Nikolić

President of the Organizing Committee

Prof. Jovan Stepanović

