

international conference

# 18. RUŽIČKA DAYS

TODAY SCIENCE – TOMORROW INDUSTRY

September 16–18, 2020 | Vukovar, Croatia



## BOOK OF ABSTRACTS

[www.ruzickadays.eu](http://www.ruzickadays.eu)

# 7. SUSRET MLADIH KEMIČARA

16. rujna 2020., VUKOVAR, HRVATSKA



$$Re = \frac{vdp}{\eta}$$

ZNAŠ ŠTO  
BI SE DOGODILO DA  
SE SILVER SURFER  
I IRON MAN  
UJEDINE?

ZNAM....  
POSTALI BI  
LEGURA!



međunarodni znanstveno-stručni skup

# 18. RUŽIČKINI DANI

DANAS ZNANOST – SUTRA INDUSTRIJA

**16. – 18. rujna 2020. | Vukovar, Hrvatska**

1978.



1998.



2018.



TESTOSTERON

2020.

## KNJIGA SAŽETAKA



**BOOK OF ABSTRACTS |  
KNJIGA SAŽETAKA**

**Published by | Izdavači**

*18<sup>th</sup> Ružička Days  
TODAY SCIENCE – TOMORROW  
INDUSTRY*

18. Ružičkini dani  
DANAS ZNANOST – SUTRA INDUSTRija

*Croatian Society of Chemical Engineers  
(CSCE)*

*Faculty of Food Technology Osijek University  
of Josip Juraj Strossmayer in Osijek*

Hrvatsko društvo kemijskih inženjera i  
tehnologa (HDKI)

Prehrambeno-tehnološki fakultet Osijek  
Sveučilišta J. J. Strossmayera u Osijeku

Ante Jukić

Vesna Ocelić Bulatović

Dajana Kučić Grgić

AUTORI, koji su odgovorni za tekst sažetaka i  
slike

*AUTHORS, who are fully responsible for the  
abstracts and figures*

Zdenko Blažeković

Ante Jukić (predsjednik/chairman),  
Jurislav Babić (dopredsjednik/vice-chairman),  
Vesna Ocelić Bulatović  
(dopredsjednica/vice-chairman),  
Đurđica Ačkar, Ljubica Glavaš-Obrovac,  
Dajana Kučić Grgić, Vesna Ocelić Bulatović,  
Senka Vidović, Marjana Simonič,  
Miroslav Šlouf, Zora Pilić

Damir Boras, Božo Galić, Vlado Guberac,  
Marin Hraste, Zvonimir Janović,  
Vesna Jurić Bulatović, Leo Klasinc,  
Filip Kljajić, Ruža Marić, Ivan Penava,  
Vlasta Pilizota, Drago Šubarić, Vitomir  
Šunjić, Srećko Tomas, Nenad Trinajstić

**Honorary Committee |  
Počasni odbor**

ISBN (HDKI): 978-953-6894-75-8  
ISBN (PTF): 978-953-7005-72-6

Zagreb i Osijek, 2020.

**Pokrovitelj**

Hrvatska akademija znanosti i umjetnosti  
Razred za matematičke, fizičke i kemijske znanosti

***Under the Auspice of:***

*Croatian Academy of Science and Arts*  
*Department of Mathematical, Physical and Chemical Science*

**Uz potporu**

Ministarstvo znanosti i obrazovanja RH

***Supported by:***

*Ministry of Science and Education of the Republic of Croatia*



Ministarstvo poljoprivrede

*Ministry of Agriculture*



Ministarstvo gospodarstva i održivog razvoja

*Ministry of Economy and Sustainable Development*



Sveučilište Josipa Jurja Strossmayera u Osijeku

*Josip Juraj Strossmayer University of Osijek*



Fakultet kemijskog inženjerstva i tehnologije Sveučilišta u Zagrebu

*Faculty of Chemical Engineering and Technology, University of Zagreb*



Sveučilište u Zagrebu

*University of Zagreb*



Grad Vukovar

*City of Vukovar*



Hrvatski dom Vukovar

*Public Institution in Culture Hrvatski dom Vukovar*



Veleučilište Lavoslav Ružička u Vukovaru

*Polytechnic Lavoslav Ružička in Vukovar*



**Uvodne riječi**  
***Forewords***

**Ante Jukić**

18. Ružičkini dani \_ Uvodna riječ  
*18<sup>th</sup> Ružička days \_ Foreword* ..... 1

**Ivanka Miličić**

Susret mladih kemičara  
*Meeting of Young Chemists* ..... 2

**Plenarna predavanja**

**Plenary lectures**

**Vitomir Šunjić**

Organska stereokemija u Hrvatskoj, od znanosti do tehnologije

*Organic stereochemistry in Croatia, from science to technology* .....3

**Rozelindra Čož Rakovac, Marin Roje**

Bioprospecting istraživanja Jadranskog mora:  
potencijali, uspjesi, ograničenja

*Bioprospecting research of the Adriatic sea:  
potential, success and constraints* .....4

**Tatjana Gazivoda Kraljević**

Uloga benzazola kao povlaštenih struktura u razvoju novih predvodnih spojeva s antitumorskim djelovanjem

*The role of benzoazoles as a privileged scaffolds in development of novel lead compounds with antitumor potential* .....5

**Stana Tokić, Mario Štefanić, Vera Plužarić, Martina Mihalj,**

**Peter Balogh, Martin Petrek, Ljubica Glavaš-Obrovac**

Prirođene linije limfocita T u psorijazi: uvid u imunofenotip, transkriptom i repertoar T staničnog receptora

*Innate-like lymphoid T cells in psoriasis: clues on immunophenotype,  
transcriptome and TCR repertoire* .....6

**Carlo I. G. Tuberoso**

Valorizacija bioaktivnih spojeva s antioksidacijskim kapacitetom iz agroindustrijskih nusprodukata

*Valorisation of bioactive compounds with antioxidant activity from  
agroindustrial by-products* .....7

**Pozvana predavanja**

***Invited lectures***

**Marina Tišma**

Lignoceluloza kao novo crno zlato \_ snovi ili stvarnost?  
*Lignocellulose as a new black gold \_ dreams or reality?* .....8

**Šime Ukić, Marija Sigurnjak, Viktorija Prevarić, Matija Cvetnić,  
Mirjana Novak Stankov, Martina Miloloža, Marinko Markić,  
Dajana Kučić Grgić, Hrvoje Kušić, Ana Lončarić Božić, Marko Rogošić,  
Tomislav Bolanča**

Nova onečišćivila i njihov utjecaj na okoliš  
*Emerging contaminants and their influence on the environment* .....9

**Nenad Zečević, Elvira Vidović, Igor Dejanović**

Otpad kao sirovina i energet za proizvodnju „zelenog“ amonijaka  
*Waste as a feedstock and energy source  
for „green“ ammonia production* .....10

**Usmena priopćenja**  
**Oral presentations**

<b>Martin Gojun, Anita Šalić, Ana Jurinjak Tušek, Bruno Zelić</b> Mikroestraktori i eutektička otapala: zajedničko djelovanje u učinkovitom pročišćavanju biodizela <i>Microextractors and deep eutectic solvents: joint action towards efficient biodiesel purification</i> .....	11
<b>Lucija Konjević, Fabio Faraguna, Marko Racar, Marija Tirić-Unetić, Petar Ilinčić</b> Primjenjivost alkohola kao biogoriva za namješavanje u dizelsko gorivo <i>Applicability of alcohols as biofuel components for fossil diesel</i> .....	12
<b>Marija Kristić, Sanja Grubišić, Andrijana Rebekić, Marija Špoljarević, Tihana Teklić, Ana Šoštarić, Gabrijela Rebeka Stanković, Miroslav Lisjak</b> Utjecaj sumporovodika na deetiolaciju pšenične trave ( <i>Triticum aestivum L.</i> ) <i>Influence of hydrogen sulfide on de-etiolation of wheatgrass</i> ( <i>Triticum aestivum L.</i> ) .....	13
<b>Moris Mihovilović, Tatjana Gazivoda Kraljević</b> Sinteza i biološka aktivnost novih hibrida kumarina i kinolina premoštenih 1,2,3-triazolnim prstenom <i>Synthesis and biological activity of novel coumarin and quinoline hybrids bridged by 1,2,3-triazole ring</i> .....	14
<b>Katarina Mužina, Stanislav Kurajica, Sabina Keser, Goran Dražić, Marija Tirić-Unetić</b> Nanoprašci čistog i cinkom dopiranog cerijeva(IV) oksida kao UV filteri u kremama za sunčanje <i>Pure and zinc doped ceria nanopowders as UV filters in sunscreens</i> .....	15
<b>Valentina Obradović, Josip Mesić, Maja Ergović Ravančić, Brankica Svitlica, Helena Marčetić, Svjetlana Škrabal</b> Utjecaj roka berbe i kvasaca na fizikalna, kemijska i senzorska svojstva vina Graševina <i>Influence of harvest date and yeast strains on physical, chemical and organoleptic properties of Graševina wine</i> .....	16

<b>Anita Pichler, <u>Ivana Ivić, Josipa Vukoja, Iva Horvatić, Josip Šimunović, Mirela Kopjar</u></b> Utjecaj količine saharoze i trehaloze na aromatski profil punila na bazi kupina tijekom skladištenja <i>Influence of sucrose and trehalose amount on flavour profile of blackberry cream fillings during storage .....</i>	17
<b>Vesna Rastija, Domagoj Šubarić, Maja Karnaš</b> Derivati peptida kao inhibitori SARS-CoV-2-S proteina <i>Peptide derivatives as inhibitors of SARS-CoV-2-S protein .....</i>	18
<b>Tayebeh Sharifi, <u>Marin Kovačić, Marin Popović, Igor Peternel, Dražan Jozic, Marijana Kraljić Roković, Hrvoje Kušić, Urška Lavrenčič Štangar, Ana Lončarić Božić</u></b> Poluvodička svojstva BiVo <sub>4</sub> za obradu vode vidljivom i sunčevom svjetlosti <i>Semiconducting properties of BiVo<sub>4</sub> for visible- and solar-light driven water treatment .....</i>	19
<b>Maja Fabulić Ruszkowski, Bernard Suknjov, Ivana Čović Knezović, Vesna Kučan Polak, Lucija Konjević</b> Zelena INA <i>Green INA .....</i>	20

**Posterska priopćenja**  
*Poster presentations*

**Sekcija: Kemijska analiza i sinteza**  
*Topic: Chemical analysis and synthesis*

**Jelena Bijelić, Dalibor Tatar, Anna-Marija Milardović, Antonia Vicić, Anamarija Stanković, Pascal Cop, Sebastian Werner, Zvonko Jagličić, Bernd Smarsly, Igor Djerdj**

Prednost otopinskih metoda za sintezu  $\text{Sr}_3\text{Fe}_2\text{WO}_9$

*Advantage of solution methods towards synthesis of  $\text{Sr}_3\text{Fe}_2\text{WO}_9$*  ..... 21

**Roko Blažić, Elvira Vidović**

Sinteza 1,2,3-triazolnog derivata benzofenona klik kemijom

*Synthesis of 1,2,3-triazole derivate of benzophenone by click chemistry* ..... 22

**Filip Brleković, Lucija Višić, Arijeta Bafti, Juraj Šipušić, Vilko Mandić**

Optimiranje priprave sintetskih geopolimera u konfiguraciji tankog filma

*Optimisation of preparation of the synthetic geopolymers in a thin-film configuration* ..... 23

**Nataša Burić, Marina Šekutor**

Diamantoidni esteri u dizajnu nanomaterijala

*Diamondoid esters in nanomaterial design* ..... 24

**Anamarija Cindrić, Laura Penić-Ivanko, Martina Mušković,**

**Ivana Ratkaj, Nela Malatesti**

Fotodinamički učinak amfifilnih tripiridilporfirina na stanicama melanoma

*Photodynamic activity of amphiphilic tripyridylporphyrins on melanoma cells* ..... 25

**Ivan Čorić, Kristina Jandel, Jelena Bijelić, Elvira Kovač-Andrić**

Razvoj mehanokemijske metode za sintezu metalo-organskih mreža

*Evolution of mechanochemical method towards synthesis of metal-organic frameworks* ..... 26

---

<b>Senka Djaković, Jasmina Lapić, Ivana Kuzman, Mateja Toma, Valerije Vrček</b> Reakcija kopulacije ferocena i C5-supstituiranih derivata uracila <i>The copulation reaction of ferrocene and C5-substituted uracil derivatives</i> .....	27
<b>Nikolina Filipović, Jelena Brdarić, Berislav Marković, Dalibor Tatar, Milan Pajičić, Damir Varevac, Ivana Miličević</b> Modifikacija i primjena građevinskih materijala za izgradnju zdravih zgrada <i>Modification and application of construction materials for healthy buildings</i> .....	28
<b>Emerik Galić, Nikolina Golub, Kristina Radić, Dubravka Vitali Čepo, Nikolina Kalčec, Ivana Vinković Vrček, Tomislav Vinković</b> Primjena pektina iz kore mandarine ( <i>C. reticulata</i> ) u biogenoj sintezi selenovih nanočestica <i>Application of mandarin (<i>C. reticulata</i>) peel pectins in biogenic synthesis of selenium nanoparticles</i> .....	29
<b>Olivera Galović, Maria Elena Nikolić, Luka Dornjak, Matea Marunica, Zlata Kralik</b> Priprema uzoraka i analize sadržaja nutricina u konzumnim jajima <i>Sample preparation and analysis of nutricines content in table eggs</i> .....	30
<b>Ivana Hazdovac, Lara Jurković, Dijana Pavičić-Hamer, Bojan Hamer, Daniel Mark Lyons</b> Utjecaj abiotičkih čimbenika na koloidnu stabilnost srebrnih nanočestica pri visokoj ionskoj jakosti <i>Influence of abiotic parameters on silver nanoparticle colloidal stability in high strength electrolytes</i> .....	31
<b>Klara Iličić, Tatjana Šafarik, Ivana Balić, Tomislav Balić, Martina Medvidović-Kosanović</b> Utjecaj inertnog elektrolita na oksido-redukcjska svojstva kompleksa cinka sa hidrazidnim derivatom dipikolinske kiseline <i>The effect of inert electrolyte on oxido-reduction properties of zinc complex with dipicolinic acid hydrazide derivative</i> .....	32

<b>Jozo Ištuk, Lidija Jakobek, Ivica Strelec</b> Ekstrakcija i razdvajanje polifenolnih skupina bobica aronije i bazge <i>Extraction and separation of polyphenol classes in chokeberry and elderberry fruit .....</i>	33
<b>Irena Ivanišević, Stjepan Milardović</b> Sinteza i karakterizacija nanočestica bakra stabiliziranih prevlakom metalnog srebra <i>Synthesis and characterization of silver-protected copper nanoparticles....</i>	34
<b>Marija Jakić, Nikola Sakač, Brunislav Matasović, Marija Jozanović</b> Mikročip kapilarna elektroforetska analiza $\beta$ -alanina i L-histidina s C <sup>4</sup> D detektorom <i>Microchip capillary electrophoretic analysis of <math>\beta</math>-alanine and L-histidine with C<sup>4</sup>D detector .....</i>	35
<b>Zlata Lasić, Irena Radić, Antonija Radić, Asja Čulina, Nives Galić</b> Razvoj i validacija SFC metode za određivanje onečišćenja u elvitegraviru <i>Development and validation of SFC method for determination of impurities in elvitegravir .....</i>	36
<b>Mirjana Lončar, Melita Lončarić, Mario Komar, Maja Molnar</b> Eutektička otapala na bazi kolin-klorida kao prikladan zeleni medij za sintezu kumarinskih Schiffovih baza <i>Choline chloride based deep eutectic solvents as suitable green media for synthesis of coumarinyl Schiff bases .....</i>	37
<b>Silvija Maračić, Martina Piškor, Ivona Čipor, Jasmina Lapić, Senka Djaković, Silvana Raić-Malić</b> Sinteza novih N-heterocikličkih derivata 1,1'-disupstituiranih ferocene primjenom mehanokemije i eutektičkih otapala <i>Synthesis of new N-heterocycle 1,1'-disubstituted ferrocene conjugates using mechanochemistry and deep eutectic solvents .....</i>	38
<b>Zvonimir Marijanović, Ani Radonić, Mladenka Šarolić, Verica Dragović-Uzelac, Maja Repajić, Ivana Gobin</b> Hlapljivi spojevi lista koprive <i>Volatile compounds of nettle leaves .....</i>	39

---

<b>Ana Matošević, Anamarija Knežević, Anita Bosak</b> Učinkovita pet stupanska sinteza biološki aktivnih karbamata <i>Efficient five-step synthetic pathway toward biologically active carbamates</i> .....	40
<b>Filipa Mrčela, Ivana Smoljko, Rolando C. S. Dias, Catarina Gomes</b> Molekulski tiskani polimeri za određivanje galne kiseline <i>Molecularly imprinted polymers for determination of gallic acid</i> .....	41
<b>Martina Mušković, Ivana Ratkaj, Nela Malatesti</b> Fotodinamički potencijal amfifilnih Zn(II) tripiridilporfirina i njihovih analoga slobodne baze <i>PDT potential of amphiphilic free-base and Zn(II) tripyridylporphyrins</i> ....	42
<b>Robert Ostrički, Tatjana Gazivoda Kraljević</b> Sinteza i strukturna karakterizacija novih 1,2,3-triazolnih derivata benzoksazola <i>Synthesis and structural characterization of novel 1,2,3- triazole derivatives of benzoxazole</i> .....	43
<b>Andrea Paut, Ante Prkić, Ivana Mitar, Josipa Giljanović, Lucija Guć</b> Ionsko-selektivne elektrode za određivanje željezovih(III) kationa <i>Ion-selective electrodes for ferric(III) cations determination</i> .....	44
<b>Kristina Pršir, Lidiya Furač, Ivana Steinberg, Svjetlana Krištafor</b> Sinteza i spektroskopska karakterizacija novih 1,2,3-triazolil-benzthiazola <i>Synthesis and spectroscopic characterization of novel 1,2,3-triazolyl-benzothiazoles</i> .....	45
<b>Lucija Ptiček, Livio Racané, Iva Zonjić, Lidija-Marija Tumir, Marijana Radić Stojković</b> Interakcije novih amidino-supstituiranih aryl-bis(benzazola) s DNA/RNA <i>Interactions of novel amidino-substituted aryl-bis(benzazoles) with DNA/RNA</i> .....	46

---

<b>Irena Radić, Zlata Lasić, Mislav Runje, Sandra Babić</b> Razvoj UHPLC metode za određivanje pimavanserina i njegovih onečišćenja primjenom AQbD strategije <i>Development of UHPLC method for the analysis of pimavanserin and its impurities using AQbD principles</i> .....	47
<b>Kristina Radić, Dubravka Vitali Čepo, Nikolina Golub, Nikolina Kalčec, Emerik Galić, Ivana Vinković Vrček, Tomislav Vinković</b> Primjena ekstrakta komine masline u biogenoj sintezi nanoselena <i>Application of olive pomace extract in biogenic synthesis of selenium nanoparticles</i> .....	48
<b>Valentina Rep, Ljubica Glavaš-Obrovac, Marijana Jukić, Silvana Raić-Malić</b> Novi 2-supstituirani derivati benzotiazola: sinteza i antiproliferativna ispitivanja <i>Novel 2-substituted benzothiazoles: synthesis and antiproliferative evaluation</i> .....	49
<b>Mirela Samardžić, Mateja Budetić, Aleksandar Sečenji, Bojan Šarkanj, Dean Marković, Marija Jozanović</b> Primjena novih kvaternarnih amonijevih soli za razvoj tenzidnih senzora <i>Application of new quaternary ammonium salts for development of surfactant sensors</i> .....	50
<b>Ivana Sokol, Mateja Novak, Helena Prpić, Marijan Orlović, Domagoj Drenjančević, Silvana Raić-Malić, Tatjana Gazivoda Kraljević</b> Sinteza i antibakterijska aktivnost novih benzotiazolnih derivata <i>Synthesis and antibacterial activity of novel benzothiazole derivatives</i> .....	51
<b>Anamarija Stanković, Silvija Šafranko, Katarina Jurišić, Ivana Balić, Jelena Bijelić, Stela Jokić, Martina Medvidović-Kosanović</b> Utjecaj vitamina C i kompleksnosti sustava na taloženje kalcijeva oksalata <i>Effect of vitamin C and system complexity on the calcium oxalate precipitation</i> .....	52

---

<b>Anita Štrkalj, Zoran Glavaš, Martin Pejaković</b> Određivanje nikla u nodularnom lijevu primjenom različitih spektrometrijskih metoda <i>Determination of nickel in the ductile iron using different spectrometric methods</i> .....	53
<b>Matea Šibalić, Fabio Faraguna, Marko Racar, Lucija Konjević, Jelena Parlov Vuković</b> Utjecaj reakcijskih parametara na sintezu propilnih estera masnih kiselina <i>Influence of reaction parameters on the synthesis of propyl esters of fatty acids</i> .....	54
<b>Leo Štefan, Dubravka Matković-Čalogović, Lara Saftić Martinović, Miljenko Dumić</b> Sinteza i struktura 1-metil-2-(metilsulfanil)-1 <i>H</i> -imidazol hidrojodida <i>Synthesis and structure of 1-methyl-2-methylsulphanyl-1<i>H</i>-imidazole hydroiodide</i> .....	55
<b>Dalibor Tatar, Jelena Bijelić, Ana Ivanković, Pascal Cop, Sebastian Werner, Bernd Smarsly, Igor Djerdj</b> Utjecaj oblika nanomaterijala na nastanak kisikovih vakancija: nedopirani i dopirani cerijev dioksid <i>The effect of nanomaterial shape on formation of oxygen vacancies: non-doped and doped ceria</i> .....	56
<b>Mia Tominac, Tihana Bošnjak, Klara Perović, Tayebeh Sharifi, Hrvoje Kušić, Marijana Kraljić Roković</b> Fotoelektrokemijska svojstva nano-kompozita koji sadrži TiO <sub>2</sub> /SnS <sub>2</sub> i TiO <sub>2</sub> /SnS <sub>2</sub> /rGO međufaze <i>Photoelectrochemical properties of nano-composites containing TiO<sub>2</sub>/SnS<sub>2</sub> and TiO<sub>2</sub>/SnS<sub>2</sub>/rGO heterojunctions</i> .....	57
<b>Andrej Vidak, Iva Movre Šapić, Marta Puhar, Vladimir Dananić</b> Uloga gibanja protona unutar molekule glutaminske kiseline <i>Role of proton movement inside glutamic acid molecule</i> .....	58

**Dragana Vuk, Irena Škorić, Valentina Milašinović, Krešimir Molčanov, Željko Marinić**

Priprava novih funkcionaliziranih tienilnih biciklo[3.2.1]oktadiena  
*Preparation of new functionalized thienyl bicyclo[3.2.1]octadienes* ..... 59

**Sekcija: Kemijsko i biokemijsko inženjerstvo**

**Topic: Chemical and biochemical engineering**

**Marija Banožić, Krunoslav Aladić, Igor Jerković,**

**Senka Vidović, Marijana Blažić, Stela Jokić**

Aromatski profil komercijalnog duhanskog blenda

*Insight into the aroma profile of tobacco commercial blends* ..... 60

**Vlatka Božić, Ante Jukić**

Tvornica kultiviranog mesa – kemijski zahtjevi

*The artificial meat factory – chemical requirements* ..... 61

**Mirjana Čurlin, Tanja Pušić, Branka Vojnović, Agata Vinčić**

Karakterizacija efluenta od pranja tekstilija metodom

raspodjele veličina čestica

*Characterization of textile washing effluent by particle size distribution methods* ..... 62

**Hrvoje Dorić, Nenad Bolf, Patricija Krušlin, Nikola Rimac**

Praktična vježba regulacije temperature u zračnom tunelu

*Practical exercise of temperature control in the air tunnel* ..... 63

**Marina Duplančić, Vanja Gilja, Ivana Elizabeta Zelić, Vesna Tomašić**

Funkcionalizirani TiO<sub>2</sub> za fotokatalitičku razgradnju

neonikotinoidnih insekticida

*Functionalized TiO<sub>2</sub> for photocatalytic degradation of neonicotinoid insecticides* ..... 64

**Matko Erceg, Pero Tutman, Dubravka Bojanić Varezić, Ivana Dodig**

Karakterizacija mikroplastike u sedimentu plaže Bačvice

*Characterization of microplastics in Bačvice beach sediment* ..... 65

---

<b>Fabio Faraguna, Igor Šepić, Ante Jukić</b> Karakterizacija i primjena emulzija vode u teškom loživom ulju za smanjenje NO <sub>x</sub> emisija i potrošnje goriva   <i>Characterization and use of water-in-heavy fuel oil emulsions for reduced NO<sub>x</sub> emissions and energy saving.....</i>	66
<b>Martin Gojun, Tea Sokač, Anabela Ljubić, Anita Šalić, Davor Valinger, Bruno Zelić</b> On-line praćenje proizvodnje biodizela infracrvenom spektroskopijom <i>On-line monitoring of biodiesel production by near-infrared spectroscopy .....</i>	67
<b>Tamara Holjevac Grgurić, Željka Krtić, Emi Govorčin Bajšić, Nikolina Mrkonjić, Lovro Liverić, Zoran Jurković, Ivan Brnardić</b> Termodinamičko modeliranje Cu-Al-Mn-Ag legura <i>Thermodynamic modelling of Cu-Al-Mn-Ag alloys .....</i>	68
<b>Miće Jakić, Sanja Perinović Jozić, Tina Slatina, Mihaela Storić</b> Priprema i karakterizacija mješavina biorazgradljive polilaktidne kiseline s poli(etilen-oksidom) <i>Preparation and characterization of biodegradable polylactid acid and poly(ethylene oxide) blends .....</i>	69
<b>Katarina Jozinović, Aleksandra Sander, Gordana Vrbanec</b> Utjecaj procesnih parametara na kinetiku sušenja i morfologiju kristala   <i>Influence of process parameters on drying kinetics and the morphology of crystals .....</i>	70
<b>Dario Klarić, Nikolina Janton</b> Određivanje fazne ravnoteže kapljevina-krutina i ternarni fazni dijagrami na primjeru kokristala farmaceutski aktivne tvari <i>Solid-liquid phase equilibrium and ternary phase diagrams on a co-crystal of active pharmaceutical ingredient .....</i>	71
<b>Lorena Kordić, Petar Bibulić, Sanja Matečić Mušanić</b> Primjenjivost mikrokalorimetrije kao ne-standardne metode u istraživanju polimorfije, kokristala i soli <i>Applicability of microcalorimetry as a non- standard tool in polymorph, co-crystal and salt screening studies .....</i>	72

## AROMATSKI PROFIL KOMERCIJALNOG DUHANSKOG BLENDА

### INSIGHT INTO THE AROMA PROFILE OF TOBACCO COMMERCIAL BLENDS

Marija Banožić<sup>1</sup>, Krunoslav Aladić<sup>1</sup>, Igor Jerković<sup>2</sup>,  
Senka Vidović<sup>3</sup>, Marijana Blažić<sup>4</sup>, Stela Jokić<sup>1</sup>

<sup>1</sup>Faculty of Food Technology Osijek, J. J. Strossmayer University of Osijek,  
Franje Kuhača 18, 31 000 Osijek, Croatia

<sup>2</sup>Faculty of Chemistry and Technology, University of Split,  
Rudera Boškovića 35, 21 000 Split, Croatia

<sup>3</sup>Faculty of Technology, University of Novi Sad,  
Bulevar Cara Lazara 1, 21 102 Novi Sad, Republic of Serbia

<sup>4</sup>Veleučilište u Karlovcu, Trg J. J. Strossmayera 9, 47 000, Karlovac, Croatia

In this study, ultrasound-assisted extraction, using hexane as solvent was performed under different extraction conditions. The temperature range between 30 and 70 °C, time from 15 to 45 min, and solvent-solid ratio from 10 to 30 cm<sup>3</sup> g<sup>-1</sup> were chosen.

GC/MS was employed for determination of volatile compounds in tobacco commercial blends composed of leaf lamina. Samples were obtained from tobacco factory „Fabrika duhana Sarajevo“. Nicotine, neophytadiene and 4,8,13-duvatriene-1,3-diol were dominant compounds in all aroma profiles. Besides major compounds, tobacco blends contained variety of straight chain alkanes such as decane, dodecane, tridecane, tetradecane, pentadecane, hexadecane, heptadecane, octadecane, heneicosane, docosane, tricosane and tetracosane. Aroma is the most important attribute to define consumer acceptance of tobacco and tobacco products. Therefore, results obtained in this research could have further applications in the tobacco industry, but cosmetics and fragrance industry as well.

**Keywords:** tobacco, aroma, volatile compounds, commercial blends

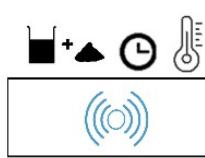
#### Acknowledgments

This study was financially supported by the Croatian Science Foundation through grant UIP-2017-05-9909.

#### AROMA PROFILE OF TOBACCO COMMERCIAL BLENDS



Tobacco commercial blend



Ultrasound-assisted extraction



Extract



GC/MS Analysis