NASTAVNO-NAUČNOM VEĆU
TEHNOLOŠKO-METALURŠKOG FAKULTETA
UNIVERZITETA U BEOGRADU

Odlukom Nastavno-naučnog veća Tehnološko-metalurškog fakulteta Univerziteta u Beogradu od 13. 05. 2021. godine imenovani smo za članove Komisije za ocenu ispunjenosti uslova za izbor dr Nedeljka Milosavljevića u zvanje VIŠI NAUČNI SARADNIK u oblasti Tehničko-tehnoloških nauka.

Na osnovu pregleda i analize dostavljenog materijala i uvida u dosadašnji rad dr Nedeljka Milosavljevića, a u skladu sa Zakonom o naučno-istraživačkoj delatnosti i Pravilnikom o postupku i načinu vrednovanja, i kvantitativnom iskazivanju naučno-istraživačkih rezultata istraživača, podnosimo sledeći

I Z V E Š T A J

1. OPŠTI BIOGRAFSKI PODACI

1.1. Biografski podaci

Dr Nedeljko Milosavljević je rođen 18. novembra 1981. godine u Zrenjaninu. Osnovnu školu je završio u Kleku, a gimnaziju u Zrenjaninu kao dobitnik Vukove diplome. Na Tehnološko-metalurški fakultet Univerziteta u Beogradu upisao se školske 2000/01. godine na odsek Organska hemijska tehnologija i polimerno inženjerstvo. Diplomirao je septembra 2005. godine na Katedri za organsku hemijsku tehnologiju sa radom na temu „Praćenje kinetike bubrenja i kontrakcije zapremine kopolimernih hidrogelova N-izopropilakrilamida i itakonske kiseline" sa ocenom 10. Srednja ocena tokom studija bila je 9,14.

Dobitnik je tri diplome „Panta S. Tutundžić" za postignute izvanredne rezultate u toku redovnih studija i priznanja Srpskog hemijskog društva za ukupan uspeh postignut tokom redovnih studija.

Doktorske studije na Tehnološko-metalurškom fakultetu Univerziteta u Beogradu, na smeru Hemija i inženjerstvo polimera, upisao je školske 2005/06. godine na Katedri za organsku hemijsku tehnologiju. Položio je sve predviđene ispite sa prosečnom ocenom 10. U periodu od 2006. do 2010. godine Nedeljko Milosavljević je bio stipendista Ministarstva nauke i tehnološkog razvoja Republike Srbije, a u periodu od januara 2011. do septembra 2011. godine bio je zaposlen u Inovacionom centru TMF-a. Od septembra 2011. godine je direktor Centra za transfer tehnologije Univerziteta u Beogradu.

Doktorsku disertaciju pod nazivom „Sinteza, karakterizacija i primena hidrogelova za izdvajanje bakra, kadmijuma i cinka iz vodenih rastvora" odbranio je 17. decembra 2010. godine na Tehnološko-metalurškom fakultetu Univerziteta u Beogradu i time stekao naučni stepen doktora tehničkih nauka iz oblasti hemija i hemijska tehnologija. Zvanje naučni saradnik stekao je 16. juna 2011.godine, a zvanje viši naučni saradnik stiče 27. oktobra 2016. godine. Na Katedri za organsku hemijsku tehnologiju učestvovao je u rukovođenju izrade pet završnih radova na osnovnim akademskim studijama i jedne doktorske disertacije.

Pohađao je i uspešno položio međunarodnu letnju školu „Corrosion of Mild Steel in Weak Acids" koju je organizovao prof. dr Srđan Nešić (Institute for Corrosion and Multiphase Flow Technology, Ohio University, Athens, USA) u periodu od 21. juna do 10. jula 2010. godine. Tokom 2011. godine boravio je tri meseca na Univerzitetu u Ohaju (Institute for Corrosion and Multiphase Flow Technology, Ohio University, Athens, USA), na postdoktorskom usavršavanju u oblasti mikroskopije.

Tokom 2012., 2013. i 2014. godine imao je priliku da se usavršava iz oblasti transfera tehnologije i inovacija na Univerzitetima u Oksfordu (Engleska), Dortmundu (Nemačka), Alikanteu, (Španija) i Univerzitetu Haifa (Izrael), u centrima za transfer tehnologije Ascenion GmbH (Nemačka) i INESC ID

(Portugalija), kao i u Zavodu za intelektualnu svojinu Republike Srbije i Evropskom patentnom zavodu. Takođe, savladao je program stalnog usavršavanja pod nazivom „Kontrolisano oslobađanje leka- osnovni principi i primena u formulaciji terapijskih sistema“ koji je usvojen od strane Senata Univerziteta u Beogradu, a održao je prof. Dr Nicolas Peppas. Usavršavao se u Kini na temu međunarodnog transfera tehnologije koji je razvijen od strane Ministarstva nauke i tehnologije Narodne Republike Kine 2016. godine. Savladao je i trening program na temu „Non-Proliferation Controls in Universities and Research Institutes” Kings koledža London, 2019. godine. Kandidat je bio član ekspertske Komisije za izbor najboljih inovacija i start-up kompanija u okviru „International Meeting among Researchers, Enterprises and Investors for Final Selection of Best <NO-BLE Ideas>”, Vratsa, Bugarska, 2014., takmičenja „Start Tel Aviv”, Beograd, 2015, „ClimateLaunchpad National Finals”, Srbija 2017, CROWDSTREAM SPRINT 2018, „Danube cup”, Budimpešta, Mađarska 2019. Od 2020. godine Nedeljko je i recenzent u okviru EIC Akceleratora EASME Evropske komisije gde je recenzirao više od 20 projekata. Od maja 2021. godine je angažovan i kao član investicione komisije EIT Urban Mobility. Održao je niz predavanja u zemlji i inostranstvu na temu transfera tehnologije i intelektualne svojine.

Nedeljko Milosavljević je bio član odbora HEPTech-a (High Energy Physics Technology Transfer Network) od 2014. do 2017.godine i potpredsednik panevropske asocijacije profesionalaca za transfer tehnologije, ASTPProton od 2015 do 2019.

Trenutno je predsednik Alijanse za biznis i inovacije, član međunarodnog odbora Asocijacije menadžera univerzitetskih tehnologija (SAD), član međunarodnog odbora Međunarodne mreže za transfer tehnologije (Kina), međunarodni partner u World Business Angels Investment Forum-u, senior konsultant i biznis developer za Oxentia-u (kompanija za transfer tehnologije Univerziteta u Oksfordu), ekspert za Evropsku komisiju i WIPO, član upravnog odbora Svi za nauku, član odbora Saveta za omladinsko preduzetništvo i član odbora Savet za nauku i industrijsku saradnju. Suosnivač je dve start-up kompanije, od kojih je jedna bazirana na istraživanju započetom u okviru njegove doktorske disertacije. Nedeljko Milosavljević je i akreditovani RTTP (Reconginzed Technology Transfer Profesional) kao jedan od 6 nosilaca RTTP iz CEEC zemalja (ukupno postoji 450 nosilaca RTTP akreditacije na nivou celog sveta).

1.2. Naučno-istraživački i stručni rad

Dr Nedeljko Milosavljević je bio angažovan kao stipendista Ministarstva za nauku i tehnološki razvoj Republike Srbije na projektu osnovnih istraživanja iz hemije „Sinteza i karakterizacija polimera i polimernih (nano)kompozita definisane molekulske i nadmolekulske strukture” (evidencioni broj 142023) od februara 2006. do jula 2010. godine. Od oktobra do decembra 2010. bio je zaposlen na istom projektu u Inovacionom centru TMF-a u zvanju istraživač-saradnik. Od januara 2011. angažovan je na projektu osnovnih istraživanja iz hemije „Sinteza i karakterizacija novih funkcionalnih polimera i polimernih (nano)kompozita” (OI 172062), u zvanju istraživač-saradnik, od juna 2011. do oktobra 2016. godine u zvanju naučni saradnik, a nakon toga u zvanju viši naučni saradnik do decembra 2019. godine kada se projekat završava. Recenzent je časopisa Polymer Bulletin i Materials Science and Engineering B. Dobitnik je nagrade „IUPAC Poster Prize” na XLVI Savetovanju Srpskog hemijskog društva održanom u Beogradu 2008. godine.

Naučno-istraživački rad dr Nedeljka Milosavljevića obuhvata sintezu i karakterizaciju polimera i polimernih materijala i kompozita koji mogu da se koriste kao sorbenti za uklanjanje teških metala i tekstilnih boja iz otpadnih voda. Takođe, bavi se sintezom polimernih materijala za kontrolisano otpuštanje lekova.

U toku rada na projektima Nedeljko Milosavljević je pokazao smisao i interesovanje za naučno-istraživački rad, izuzetnu istraživačku kreativnost, samostalnost i posvećenost poslu. Rezultati istraživanja, koji su prikazani u okviru doktorske disertacije, značajno su doprineli realizaciji projekata i potvrdili istraživačku kompetentnost kandidata.

U toku dosadašnjeg rada bio je koautor 22 rada u naučnim časopisima, od toga je 20 radova objavljeno u časopisima međunarodnog značaja (deset u časopisima kategorije M21, šest kategorije M22 i četiri kategorije M23), dva rada u časopisu nacionalnog značaja (M51), kao i dvadeset četiri naučna saopštenja, od čega jedanaest na skupovima međunarodnog značaja (dva štampana u celini (M33) i devet u izvodu (M34)), dvanaest na skupovima nacionalnog značaja (osam u celini (M63) i pet u izvodu (M64)) i jednog objavljenog patenta na međunarodnom nivou (M93). Ukupno, radovi dr Nedeljka Milosavljevića su citirani 379 puta (h indeks je 11) bez autocitata prema Scopus bazi.

Prema „BioMedUpdater“ iz novembra 2015. godine, četiri publikacije, na kojima je dr Nedeljko Milosavljević koautor, se nalaze na listi top 10 publikacija iz oblasti kontrolisanog otpuštanja aktivnih supstanci, računato od datuma objavljivanja, 2010. godine.

- Milašinović N, Knežević-Jugović Z, **Milosavljević N**, Lučić Škorić M, Filipović J, Kalagasidis Krušić M, Stimuli-sensitive hydrogel based on N-isopropylacrylamide and itaconic acid for entrapment and controlled release of Candida rugosa lipase under mild conditions, Biomed Research International (2014) 2014:364930 (**prvo mesto**).
- Milašinović N, Jakovetić S, Knežević-Jugović Z, **Milosavljević N**, Lučić M, Filipović J, Kalagasidis Krušić M, Catalyzed ester synthesis using Candida rugosa lipase entrapped by poly(N-isopropylacrylamide-co-itaconic acid) hydrogel, Scientific World Journal; (2014) 2014:142123 (**četvrto mesto**).
- Milašinović N, Knežević-Jugović Z, **Milosavljević N**, Filipović J, Kalagasidis Krušić M, Controlled release of lipase from Candida rugosa loaded into hydrogels of N-isopropylacrylamide and itaconic acid, International Journal of Pharmaceutics 436(1-2) (2012) 332-40 (**peto mesto**).
- N. Milašinović, Z. Knežević-Jugović, N. Milosavljević, J. Filipović, M. Kalagasidis Krušić, Controlled release of lipase from Candida rugosa loaded into hydrogels of N-isopropylacrylamide and itaconic acid, International Journal of Pharmaceutics, (2012) 436:1-2:332-340 (**deveto mesto**).

Nedeljko Milosavljević je učestvovao/učestvuje na nacionalnim i međunarodnim projektima:

1. Circle U. European University, Erazmus+, 2020-2023. (član tima)
2. Integrated capacity building and training programme for DANUBE area labour and business support organisations, local industry and entrepreneurs to enter innovative transnational value CHAINS as PEER-level collaboration partners, DanubePeerChains, Interreg Danube Transnational Programm, 2020-2023 (rukovodilac)
3. ”Sustainable colour catcher 2.0”, awarded by Innovation Fund, Mini Grant Program, 2020-2021 (rukovodilac).
4. Business Opportunity Support System Upgrade for Strengthening European Innovation Ecosystem, Erazmus+, Strategic partnership, 2018-2020 (rukovodilac)
5. ”Colour catcher 2.0”, awarded by Climate KIC accelerator program phase III, European Institute of Technology, 2020 (rukovodilac)
6. ”Colour catcher balls”, awarded by Climate KIC accelerator program phase II, European Institute of Technology, 2019 (rukovodilac)
7. ”Multifunctional colour catcher balls”, awarded by Climate KIC accelerator program, European Institute of Technology, 2018 (rukovodilac)
8. Western Balkan Startup Academy, Open Regional Fund for South East Europe GIZ, 2017-2019
9. Innovation,”Multifunctional colour catcher balls”, awarded by Innovation Fund, Technology Transfer Facility Program (PoC), 2017 (član tima).
10. CROWDfunding to mainSTREAM innovation CrowdStream, Interreg Danube Transnational Programm, 2017-2019 (rukovodilac)
11. MOTIVATOR, funded by USA Government, 2016-2017 (član tima).
12. Institutional framework for development of the third mission of universities in Serbia, Erasmus Plus, 2015-2018 (član tima).
13. Business Cooperation Center, EEN Serbia, 2015 -2016 (član tima).

14. Mapiranje naučnoistraživačkog potencijala Univerziteta u Beogradu, Innovation project, Ministry of Education, Science and Technological Development of the Republic of Serbia (2014-2015) (član tima).
15. Enterprise Europe Network, 2014 (član tima).
16. National Platform for Knowledge Triangle in Serbia – Tempus JP 158881 – 2009 (2010-2013) (član tima).

2. PREGLED DOSADAŠNJEG NAUČNOG I STRUČNOG RADA

Dosadašnji naučni i stručni rad dr Nedeljka Milosavljevića obuhvata objavljene naučne radove u časopisima međunarodnog i nacionalnog značaja, saopštenja na skupovima u zemlji i inostranstvu, kao i patent objavljen na međunarodnom nivou 2020. godine, gde se očekuje ulazak u nacionalne faze sledećih zemalja (EU, SAD, Kina, Indija, Rusija, Japan itd.) do 30. juna 2021. godine. Klasifikacija naučno-istraživačkih rezultata izvršena je prema važećem Pravilniku o sticanju istraživačkih i naučnih zvanja - „Sl. glasnik RS", broj 159 od 30.12.2020).

2.1. SPISAK OBJAVLJENIH RADOVA PRE IZBORA U ZVANJE VIŠI NAUČNI SARADNIK

1. Radovi objavljeni u naučnim časopisima međunarodnog značaja M20
1.1. Radovi u vrhunskim međunarodnim časopisima M21
M21=9 x 8,0 = 72,0

1.1.1. Nedeljko B Milosavljević, Ljiljana M Kljajević, Ivanka G Popović, Jovanka M Filipović, Melina T Kalagasidis Krušić, Chitosan, itaconic acid and poly(vinyl alcohol) hybrid polymer networks of high degree of swelling and good mechanical strength, *Polymer International* 59 (2010) 686-694. ISSN: 0959-8103; IF(2009)=2,137. (Polymer Science 22/76). **Heterogenih citata: 33**

1.1.2. Nedeljko B. Milosavljević, Nikola Z. Milašinović, Ivanka G. Popović, Jovanka M. Filipović, Melina T. Kalagasidis Krušić, Preparation and Characterization of pH-Sensitive Hydrogels Based on Chitosan, Itaconic Acid and Methacrylic Acid, *Polymer International* 60(3) (2011) 443-452 ISSN:0959-8103; IF(2010)=2,056. (Polymer Science 21/79). **Heterogenih citata: 57**

1.1.3. Nedeljko B. Milosavljević, Mirjana Đ. Ristić, Aleksandra A. Perić-Grujić, Jovanka M. Filipović, Svetlana B. Štrbac, Zlatko Lj. Rakočević, Melina T. Kalagasidis Krušić, Novel hydrogel based on chitosan, itaconic acid and methacrylic acid as adsorbent of Cd^{2+} ions from aqueous solution, *Chemical Engineering Journal* 165 (2010) 554-562, ISSN:1385-8947; IF(2011)= 3,461. (Engineering, Chemical 11/133). **Heterogenih citata: 31**

1.1.4. Nikola Milašinović, **Nedeljko Milosavljević**, Jovanka Filipović, Zorica Knežević-Jugović, Melina Kalagasidis Krušic, Synthesis, characterization and application of poly(N-isopropylacrylamide-co-itaconic acid) hydrogels as supports for lipase immobilization, *Reactive Functional Polymers* 70 (2010) 807–814. ISSN:1381-5148; IF(2010)=2,546 (Polymer Science 16/79). **Heterogenih citata: 30**

1.1.5. Milosavljevic Nedeljko B, Ristic Mirjana Dj, Peric-Grujic Aleksandra A, Filipovic Jovanka M, Strbac Svetlana B, Rakocevic Zlatko Lj, Kalagasidis Krušić Melina T, Sorption of zinc by novel pH-sensitive hydrogels based on chitosan, itaconic acid and methacrylic acid, *Journal of Hazardous Materials* 192(2) (2011) 846-854, ISSN: 0304-3894; IF(2011)=4,173 (Engineering, Environmental 6/45).**Heterogenih citata: 32**

1.1.6. Nikola Milašinović, **Nedeljko Milosavljević**, Jovanka Filipović, Zorica Knežević-Jugović, Melina Kalagasidis Krušić, Controlled release of lipase from Candida rugosa loaded into hydrogels of N-isopropylacrylamide and itaconic acid, *International Journal of Pharmaceutics* 436 (2012) 332-340. **ISSN:** 0378-5173; IF(2013)=3,785. (Pharmacology & Pharmacy 45/256).**Heterogenih citata: 10**

1.1.7. Lucic Marija, **Milosavljevic Nedeljko B**, Radetic Maja M, Saponjic Zoran V, Radoicic Marija B, Kalagasidis-Krusic Melina T, Photocatalytic Degradation of C. I. Acid Orange 7 by TiO_2 Nanoparticles Immobilized onto/into Chitosan- Based Hydrogel, *Polymer Composites* 35(4) (2014) 806-815. ISSN: 0272-8397 IF (2014)=1,632 (Materials Science, Composites 7/24). **Heterogenih citata: 6**

1.1.8. Lučić Marija, **Milosavljević Nedeljko**, Radetić Maja, Šaponjić Zoran, Radoičić Marija, Kalagasidis Krušić Melina, The potential application of TiO_2/hydrogel nanocomposite for removal of various textile azo dyes, *Separation and Purification Technology* 122 (2014) 206-216. ISSN: 1383-5866 IF (2014)=3,091 (Engineering, Chemical 16/135). **Heterogenih citata: 43**

1.1.9. Nikola Milašinović, Sonja Jakovetić, Zorica Knežević-Jugović, **Nedeljko Milosavljević**, Marija Lučić, Jovanka Filipović, Melina Kalagasidis Krušić, Catalyzed ester synthesis using Candida rugosa lipase entrapped by poly(N-isopropylacrylamide-co-itaconic acid) hydrogel, *The Scientific World Journal*, (2014) 142123. ISSN: 1537-744X; IF(2013)=1,219. (Multidisciplinary Sciences 16/55).**Heterogenih citata: 9**

1.2. Radovi u istaknutim međunarodnim časopisima M22
M22=5 x 5,0 = 25,0

1.2.1. Nikola Milašinović, **Nedeljko Milosavljević**, Jovanka Filipović, Zorica Knežević-Jugović, Melina Kalagasidis Krušić, Efficient immobilization of lipase from *Candida rugosa* by entrapment into poly(*N*-isopropylacrylamide-*co*-itaconic acid) hydrogels under mild conditions, *Polymer Bulletin* 69(3) (2012) 347-361. **ISSN:** 0170-0839; IF(2011)=1,532. (Polymer Science 33/79).**Heterogenih citata: 4**

1.2.2. Melina Kalagasidis Krušić, **Nedeljko Milosavljević**, Aleksandra Debeljković, Ömer Baris Üzüm, Erdener Karadağ, Removal of Pb^{2+} Ions from Water by Poly(Acrlyamide-co-Sodium Methacrylate) Hydrogels, *Water Air Soil Pollution* 223(7) (2012) 4355-4368 **ISSN:** 0049-6979 IF(2013)=1,685. (Environmental Sciences 106/216).**Heterogenih citata: 19**

1.2.3. Milosavljević, Nedeljko, Debeljković Aleksandra, Kalagasidis Krušić Melina, Milašinović Nikola, Uzum Ömer Baris, Karadağ Erdener, Application of poly(acrlymide-co-sodium methacrylate) hydrogels in copper and cadmium removal from aqueous solution, *Environmental Progress and Sustainable Energy* 33(3) (2014) 824-834. ISSN: 1944-7442 IF (2014)=1,403 (Engineering, Chemical 66/135). **Heterogenih citata: 7**

1.2.4. Lucic-Skoric Marija, **Milosavljevic Nedeljko B**, Radetic Maja M, Saponjic Zoran V, Radoicic Marija B, Kalagasidis-Krusic Melina T, Synthesis and characterization of interpenetrating polymer network based on sodium alginate and methacrylic acid and potential application for immobilization of TiO_2 nanoparticles, *Polymer Engineering and Science* 55(11) (2015) 2511-2518. ISSN: 0032-3888 IF (2014)=1,520 (Engineering, Chemical 61/135).**Heterogenih citata: 3**

1.2.5. Milosavljević Nedeljko, Ristić Mirjana, Perić-Grujić Aleksandra, Filipović Jovanka, Štrbac Svetlana, Rakočević Zlatko, Kalagasidis Krušić Melina, Removal of Cu^{2+} ions using hydrogels of chitosan, itaconic and methacrylic acid: FTIR, SEM/EDX, AFM, kinetic and equilibrium study, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 388 (2011) 59-69. ISSN: 0927-7757 IF (2011)=2,236 (Chemistry, Physical 61/134).**Heterogenih citata: 60**

1.3. Radovi u međunarodnim časopisima M23
M23=4 x 3,0 = 12,0

1.3.1. Nedeljko B Milosavljević, Nikola Z Milašinović, Jovanka M Filipović, Melina T Kalagasidis Krušić, Sinteza i karakterizacija semi-interpenetrirajućih mreža hitozana i poli(N-vinil-2-pirolidona), *Hemijska industrija*, 64 (2010) 511-517. ISSN: 0367-598X; IF(2011)=0,205. (Engineering, Chemical 120/133).

1.3.2. Nedeljko Milosavljević, Nikola Milašinović, Jovanka Filipović, Melina Kalagasidis-Krušić, Synthesis and characterization of copolymer hydrogels of chitosan, itaconic acid and *N*-isopropilacrylamide, *Hemijska industrija* 65(6) (2011) 657-666. ISSN: 0367-598X; IF(2012)=0,463. (Engineering, Chemical 1040/133).**Heterogenih citata: 3**

1.3.3. Nikola Milašinović, **Nedeljko Milosavljević**, Jovanka Filipović, Zorica Knežević-Jugović, Melina Kalagasidis Krušić, Immobilization of lipase from *Candida rugosa* into copolymer hydrogels of poly(*N*-isopropylacrylamide-*co*-itaconic acid) synthesized in the presence of surfactants, *Hemijska industrija* 65(6) (2011) 667-673. ISSN: 0367-598X; IF(2012)=0,463. (Engineering, Chemical 104/133).

1.3.4. Nikola Milašinović, Zorica Knežević-Jugović, **Nedeljko Milosavljević**, Marija Lučić Škorić, Jovanka Filipović, Melina Kalagasidis Krušić, Stimuli-sensitive hydrogel based on *N*-isopropylacrylamide and itaconic acid for entrapment and controlled release of *Candida rugosa* lipase under mild conditions, *BioMed Research International* DOI http://dx.doi.org/10.1155/2014/364930. **ISSN:** 2314-6133; IF(2014)=1,579. (Biotechnology & Applied Microbiology 107/163).**Heterogenih citata: 6**

2. Naučni radovi objavljeni u časopisima nacionalnog značaja M50
2.1 U vrhunskom časopisu nacionalnog značaja M51
M51=1 x 2,0 = 2,0

2.1.1. Nedeljko B Milosavljević, Jovanka M Filipović, Melina T Kalagasidis Krušić, Semi-interpenetrirajuće mreže hitozana i poli(etilen glikola), *Hemijska industrija* 62 (2008) 345-351. ISSN: 0367-598X; IF(2009)=0,117 (Engineering, Chemical 118/127).

3. Zbornici međunarodnih naučnih skupova M30
3.1. Saopštenja sa međunarodnih skupova štampana u celini M33
M33=2 x 1,0 = 2,0

3.1.1. Nedeljko B Milosavljević, Melina T Kalagasidis Krušić, Jovanka M Filipović, Swelling Behaviour And Mechanical Properties Of Semi-IPNs Of Chitosan And Poly(Ethylene Glycol), 20th Congress of Chemists and Technologysts of Macedonia, Ohrid, 2008, Zbornik radova (CD Rom), KL-07-E.

3.1.2. Trifković Kata, Milašinović Nikola, Kalagasidis Krušić Melina, Knežević-Jugović Zorica, **Milosavljević Nedeljko,** Djordjević Verica, Bugarski Branko, FT-IR spectroscopy characterization of gelatin/chitosan hydrogels for encapsulation of polyphenols from Thymus Serpyllum L. IV Međunarodni kongres: „Engineering, Environment and Materials in Processing Industry", Zbornik radova, Jahorina, Bosna i Hercegovina (2015) 318-325. DOI: 10.7251/EEMEN1501318T, ISBN 978-99955-81-18-3.

3.2 Saopštenja sa međunarodnih skupova štampana u izvodu M34
M34=9 x 0,5 = 4,5

3.2.1. Marija Lučič Škorć, **Nedeljko Milosavljević**, Marija Radoičić, Zoran Šaponjić, Maja Radetić, Nikola Milašinović, Melina Kalagasidis Krušić, Immobilization of TiO_2 nanoparticles onto chitosan-based microparticles for photodegradation of C.I. Acid Orange 7, International Symposium on Amphiphilic Polymers, Networks, Gels and Membranes (2015), Budapest, Hungary, Book of Abstract, 70.

3.2.2. Ivan Terzić, Marija Lučič Škorć, Nikola Milašinović, **Nedeljko Milosavljević**, Jasna Ivanović, Irena Žižović, Melina Kalagasidis Krušić, Supercritical CO_2 impregnation of chitosan based xero- and aerogels with thymol, International Symposium on Amphiphilic Polymers, Networks, Gels and Membranes (2015), Budapest, Hungary, Book of Abstract, 69.

3.2.3. Marija Lučič Škorć, **Nedeljko Milosavljević**, Maja Radetić, Zoran Šaponjić, Marija Radoičić, Melina Kalagasidis Krušić, TiO_2/alginate based hydrogel nanocomposite for photocatalytic

degradation of methylene blue, 15th International Conference Polymers and Organic Chemistry (2014), Timisoara, Romania, Book of Abstract, 105.

3.2.4. Ivan Terzić, Jelena Antić-Stanković, Marija Lučić Škorić, **Nedeljko Milosavljević**, Nikola Milašinović, Melina Kalagasidis Krušić, Antimicrobial activity of zinc ions crosslinked alginate/gelatin hydrogels, 15th International Conference Polymers and Organic Chemistry (2014), Timisoara, Romania, Book of Abstract, 119.

3.2.5. Marija Lučić, Nikola Milašinović, **Nedeljko Milosavljević**, Bojana Vidović, Jelena Antić Stanković, Melina Kalagasidis Krušić, Chitosan-based hydrogels containing silver for antimicrobial application, "ICOSECS 8" (2013), Belgrade, Serbia, Book of Abstracts, 219.

3.2.6. Nikola Milašinović, **Nedeljko Milosavljević**, Marija Lučić, Zorica Knežević-Jugović, Melina Kalagasidis Krušić, Chitosan/Gelatin based hydrogels for controlled release of lipase form Candida rugosa, "ICOSECS 8" (2013), Belgrade, Serbia, Book of Abstracts, 222.

3.2.7. Marija Lučić, **Nedeljko Milosavljević**, Nikola Milašinović, Jovanka Filipović, Melina Kalagasidis Krušić, Superporous Hydrogels of Chitosan, Itaconic Acid and Methacrylic Acid, "YUCOMAT 2012" (2012), Herceg Novi, Montenegro, Book of Abstracts, 98.

3.2.8. Marija Lučić, **Nedeljko Milosavljević**, Maja Radetić, Zoran Šaponjić, Marija Radojičić, Melina Kalagasidis Krušić, Photocatalytic degradation of C.I. Acid Orange 7 by TiO_2/hydrogel nanocomposite, First International Conference on Processing, characterization and application of nanostructured materials and nanotechnology NanoBelgrade (2012), Belgrade, Serbia, Book of Abstracts, 114.

3.2.9. Marija Lučić, **Nedeljko Milosavljević**, Nikola Milašinović, Jovanka Filipović, Melina Kalagasidis Krušić, Synthesis of superabsrobent hydrogels based on chitosan, First International Conference of Young Chemists of Serbia (2012), Belgrade, Serbia, 75.

4. Zbornici skupova nacionalnog značaja M60

4.1. Saopštenja sa skupova nacionalnog značaja štampana u celini M63

M63=7 x 0,5 = 3,5

4.1.1. Nedeljko B Milosavljević, Melina T Kalagasidis Krušić, Jovanka M Filipović, „pH-osetljivihidrogelovi hitozana, itakonske i metakrilne kiseline", XLVIII Savetovanje Srpskog hemijskog društva, Novi Sad, 2010, Zbornik radova (CD Rom), 237-240.

4.1.2. Nedeljko B Milosavljević, Melina T Kalagasidis Krušić, Jovanka M Filipović, „ Semi-interpenetrirajuće mreže hitozana i poli(vinil pirolidona) ", XLVII Savetovanje Srpskog hemijskog društva, Beograd, 2009, Zbornik radova (CD Rom), 206-209.

4.1.3. Nedeljko B Milosavljević, Melina T Kalagasidis Krušić, Jovanka M Filipović, „ Semi-interpenetrirajuće mreže hitozana i i poli(etilen glikola) " , XLVI Savetovanje Srpskog hemijskog društva, Beograd, 2008, Zbornik radova (CD Rom), 255-258.

4.1.4. Nedeljko B Milosavljević, Mirjana Đ. Ristić, Aleksandra A. Perić-Grujić, Jovanka M. Filipović, Melina T. Kalagasidis Krušić, „ Equilibrium Sorption Isotherm for Cu^{2+} Ions on Hydrogels Based on Chitosan, Itaconic Acid and Methacrylic Acid", Biotehnologija za održivi razvoj, Beograd, 2010, Zbornik radova (CD Rom), 85-88.

4.1.5. Nikola Z. Milašinović, **Nedeljko B. Milosavljević**, Jovanka M Filipović, Zorica D. Knežević, Melina T. Kalagasidis Krušić, „Uticaj sastava hidrogelova poli(N-izopropilakrilamid-ko-itakonska kiselina) na otpuštanje lipaze iz Candida rugosa", Biotehnologija za održivi razvoj, Beograd, 2010, Zbornik radova (CD Rom), 73-76.

4.1.6. Nikola Milašinović, **Nedeljko Milosavljević**, Melina Kalagasidis Krušić, Zorica Knežević, Jovanka Filipović, „Imobilizacija lipaze iz *Candida rugosa* u hidrogelove N-izopropilakrilamida i itakonske kiseline ", XLV Savetovanje Srpskog hemijskog društva, Novi Sad, 2007, Zbornik radova (CD Rom), 61-64.

4.1.7. Marija Lučić, **Nedeljko Milosavljević**, Svetlana Grujić, Mila Laušević, Melina Kalagasidis Krušić, Chitosan hydrogels for controlled drug release of diazepam, paracetamol and diclofenac, XLIX Meeting of Serbian Chemical Society (2011), Kragujevac, Serbia, 159-162.

4.2. Saopštenja sa skupova nacionalnog značaja štampana u izvodu M64
M64=5 x 0,2 = 1,0

4.2.1. Nedeljko B Milosavljević, Melina T Kalagasidis Krušić, Jovanka M Filipović, „Hidrogelovi hitozana i poli(vinil alkohola)“, „Čistije tehnologije i novi materijali – put u održivi razvoj“, TMF, Beograd, 2008, Knjiga izvoda radova, 55.

4.2.2. Nedeljko Milosavljević, Nikola Milašinović, Melina Kalagasidis Krušić, Jovanka Filipović, „Sinteza hidrogelova itakonske kiseline i hitozana “, XLV Savetovanje Srpskog hemijskog društva, Novi Sad, 2007, Kratki izvodi radova, 114.

4.2.3. Nedeljko Milosavljević, Nikola Milašinović, Melina Kalagasidis Krušić, Zorica Knežević, Jovanka Filipović, „Imobilizacija lipaze na hidrogelovima na bazi *N*-izopropilakrilamida i itakonske kiseline“, XIV Simpozijum o Hemiji i Tehnologiji Makromolekula, MAKRO 2006, Vršac, 2006, Knjiga izvoda radova, 48.

4.2.4. Nikola Milašinović, Zorica Knežević-Jugović, **Nedeljko Milosavljević**, Marija Lučić Škorić, Jovanka Filipović, Melina Kalagasidis Krušić, Production of n-amyl isobutyrate using lipase from Candida rugosa immobilized into N-isopropylacrylamide and itaconic acid hydrogel, 51. Meeting of Serbian Chemical Society (2014), Belgrade, Serbia, Book of Abstract, 83.

4.2.5. Marija Lučić, **Nedeljko Milosavljević**, Maja Radetić, Zoran Šaponjić, Marija Radoičić, Melina Kalagasidis Krušić, Removal and photocatalytic degradation of C.I. Acid Orange 7 from aqueous solution, L Meeting of Serbian Chemical Society (2012), Belgrade, Serbia, 141.

5. Magistarske i doktorske teze M70
5.1. Odbranjena doktorska disertacija M71
M71=1 x 6,0 = 6,0

5.1.1. Nedeljko Milosavljević, "Sinteza, karakterizacija i primena hidrogelova za izdvajanje bakra, kadmijuma i cinka iz vodenih rastvora", Tehnološko-metalurški fakultet, Univerzitet u Beogradu, 17. decembar 2010.

Tabela 1. Doprinos realizaciji koautorskih radova za prethodno zvanje: pozicije na listi autora za objavljene radove i saopštenja.

Pozicija autora	**1**	**2**	**3**	**4**	**5**	**Ukupno**	**Procenat (%)**
M21	4	4		1		**9**	21,4
M22	2	3				**5**	11,9
M23	2	1	1			**4**	9,5
M33	1				1	**2**	4,8
M34		6	1	2		**9**	21,4
M51	1					**1**	2,4
M63	4	3				**7**	16,7
M64	3	1	1			**5**	11,9
Ukupno	17	18	3	3	1	**42**	**100,0**
Procenat (%)	40,5	42,9	7,1	7,1	2,4	**100,0**	

6. Rad u okviru akademske društvene zajednice
Predavanja za učenike osnovnih, srednjih škola ili odgovarajućih građanskih organizacija (Z63)

6.1. Horizon 2020 Project Contracts: IP and Legal Issues, Enterprise Europe Network - Sector Group Micro and Nanotechnologies, Belgrade, Serbia, 2015.
6.2. Introduction to Technology Transfer, Belgrade International Molecular Life Science Conference for Students, Belgrade, Serbia, 2015.
6.3.Technology Transsfer - Intro, Summer School on Knowledge and Technology Transfer, Belgrade, Serbia, 2014.
6.4. Role of Technology Transfer in the Horizon 2020, Info day Horizon 2020, Belgrade, Serbia, 2014.
6.5.Technology Transfer In Higher Education: The Case Of University Of Belgrade, International Conference on Technology Transfer, ICTT 2013, Niš, Serbia, 2013.
6.6. Technology Transfer, Mechanical Faculty University of Belgrade, Belgrade, Serbia, 2013.

2.2. NAUČNA SARADNJA I SARADNJA SA PRIVREDOM PRE IZBORA U ZVANJE

2.2.1. Učešće u međunarodnim projektima

1. Institucionalni okvir za razvoj treće misije Univerziteta u Srbiji, Ugovor br. 561655-EPP-1-2015-1-RS-EPPKA2-CBHE-SP (2015-2018). Projekat finansira Evropska Komisija u okviru ERASMUS PLUS programa.

2.2.2. Učešće u projektima finansiranim od strane nadležnog Ministarstva

1. „Sinteza i karakterizacija polimera i polimernih (nano)kompozita definisane molekulske i nadmolekulske strukture“ evidencioni broj 142023, Ministarstvo za nauku i tehnološki razvoj Republike Srbije, Srbija (2006-2010).
2. „Sinteza i karakterizacija novih funkcionalnih polimera i polimernih (nano)kompozita” evidencioni broj 172062, Ministarstvo za nauku i tehnološki razvoj Republike Srbije, Srbija (2011-2015).
3. Inovacioni projekat, Mapiranje naučno-istraživačkog potencijala Univerziteta u Beogradu, (2014-2015).
4. Projekat sa privredom, Construction of Three Layer Polyolefin Steel Pipe Coating Line System, A.D. Izolir, Zrenjanin, Srbija (2013).

2.3. SPISAK OBJAVLJENIH RADOVA POSLE IZBORA U ZVANJE VIŠI NAUČNI SARADNIK

1. Radovi objavljeni u naučnim časopisima međunarodnog značaja M20
1.1. Radovi u vrhunskim međunarodnim časopisima M21
M21=1 x 8,0 = 8,0

A1.1.1 Lučić Škorić Marija, Terzić Ivan, **Milosavljević Nedeljko**, Radetić Maja, Šaponjić Zoran, Radoičić Marija, Kalagasidis Krušić Melina, Chitosan-based microparticles for immobilization of TiO_2 nanoparticles and their application for photodegradation of textile dyes, *European Polymer Journal* 82 (2016) 57-70. ISSN: 0014-3057; IF(2015)=3,485. (Polymer Science 13/85).
Heterogenih citata: 19

1.2. Radovi u istaknutim međunarodnim časopisima M22
M22=1 x 5,0 = 5,0

A1.2.1 Terzić Ivan, Ivanović Jasna, Žižović Irena, Lučić Škorić Marija, **Milosavljević Nedeljko**, Milašinović Nikola, Kalagasidis Krušić Melina, A novel chitosan gels: Supercritical CO_2 drying and

impregnation with thymol, *Polymer Engineering and Science* 58(12) (2018), 2192-2199. ISSN: 0032-3888 IF (2018) = 1.920 (Polymer science, 40/87). **Heterogenih citata: 7**

2. Naučni radovi objavljeni u časopisima nacionalnog značaja M50
2.1 U vodećem časopisu nacionalnog značaja M51
M51=1 x 2,0 = 2,0

A2.1.1 Lučić Škorić Marija, Stanojković Lazar, **Milosavljević Nedeljko**, Kalagasidis Krušić Melina, Sorption of Textile Dyes From Textile Wastewater by Chitosan-based Hydrogel, *Tehnika* 1 (2018) 11-18 UDC: 615.454.1:678.741 ISSN 0040-2176. (Časopis saveza inženjera i tehničara Srbije).

3. Zbornici skupova nacionalnog značaja M60
3.1. Saopštenja sa skupova nacionalnog značaja štampana u celini M63
M63=1 x 0,5 = 0,5

A3.1.1 Lučić Škorić Marija, Nikodinović-Runić Jasmina, **Milosavljević Nedeljko**, Milašinović Nikola, O'Connor Kevin, Kalagasidis Krušić Melina, Antifungalni filmovi na bazi polihidroksialkanoata, *54. Savetovanje Srpskog hemijskog društva*, Beograd, Srbija 2017, 139-143. ISBN 978-86-7132-067-2

4. Patenti M90
4.1 Objavljen patent na međunarodnom nivou
M93=1 x 9,0 = 9,0

A4.1.1. Milosavljević Nedeljko, Lučić Škorić Marija, Kalagasidis Krušić Melina, DYE SCAVENGER AND METHOD OF PRODUCTION OF DYE SCAVENGER, International Filing Date 10.12.2018, International Application No. PCT/RS2018/000019, Publication Date 18.06.2020, Publication Number WO/2020/122743

Pozicija autora	**1**	**2**	**3**	**4**	**5**	**Ukupno**	**Procenat (%)**
M21			1			**1**	20,0
M22					**1**	**1**	20,0
M51			1			**1**	20,0
M63			1			**1**	20,0
M90	1					**1**	20,0
Ukupno	1		3		1	**5**	**100,0**
Procenat (%)	20,0		60,0		20,0	**100,0**	

5. Rad u okviru akademske društvene zajednice
Predavanja za učenike osnovnih, srednjih škola ili odgovarajućih građanskih organizacija (Z63)

5.1 Osnovi intelektualne svojine (*online*), Tehnopolis, Nikšić, Crna Gora, Maj 2021.
5.2 Intelektualna svojina u poslovanju (*online*), NALED, Beograd, Srbija, April 2021.
5.3 Radionica "The role of innovation in product commercialization" (*online*), NiCAT, Nis, Srbija, Decembar 2020.

5.4 Enhancing the capacity to support for "Startups and innovation" of business management and organization investment (*online*), Vietnam National University, Vietnam, 2020.
5.5 Introduction to TT and Business Opportunity Support System platform (*online* trening), Advanced Training Class for Medical and Health Technology Transfer Talents (Second Edition), Capital Medical University Beijing China, 2020.
5.6 Inovacioni brokeri - trening (Development of Innovation Networks, Commercialization, IP, Evaluation of Business Ideas etc.), Tehnopolis, Niksić, Crna gora, 25 i 26 februar 2020.
5.7 Fundamentals of Technology Transfer, Technology transfer Training, Zhengzhou, Kina, Oktobar 2019.
5.8 Further Implementation of the National IP Policies Project in Belarus, Regional Workshop on IP Policies for Universities and Research Institutions organized by the World Intellectual Property Organization (WIPO) in cooperation with the National Center of Intellectual Property of Belarus (NCIP), Belorusija, Oktobar 2019.
5.9 Challenges in Implementation of IP Policies in Universities and Research Institutions, Regional Workshop on IP Policies for Universities and Research Institutions organized by the World Intellectual Property Organization (WIPO) in cooperation with the National Center of Intellectual Property of Belarus (NCIP), Belorusija, Oktobar 2019.
5.10 Knowledge Transfer as an Engine for Growth, National Seminar on IP Management in the Contemporary Economic and Technological Circumstances organized by the World Intellectual Property Organization (WIPO) in cooperation with the National Center of Intellectual Property of Belarus (NCIP), and the Polotsk State University, Belorusija, Oktobar 2019.
5.11 Knowledge Transfer: A Tool for Regional Development, NETVAL Conference ''The Evolving Role of Technology Transfer'', Italija, Septembar 2019.
5.12 Challenges in establishing Technology Transfer Offices in Countries in Transition, National Seminar Technology Transfer And Commercialization, organized by the World Intellectual Property Organization (WIPO) and the National Center for Patents and Information (NCPI), Ministry of Economic Development and Trade of the Republic of Tajikistan, Dušanbe, Tadžikistan, Maj 2019.
5.13 IP Marketing – Bring Your Technology from the Lab to Market, National Seminar Technology Transfer And Commercialization, organized by the World Intellectual Property Organization (WIPO) and the National Center for Patents and Information (NCPI), Ministry of Economic Development and Trade of the Republic of Tajikistan, Dušanbe, Tadžikistan, Maj 2019.
5.14 How to Launch Startups in Countries with Economies in Transition, National Seminar Technology Transfer And Commercialization, organized by the World Intellectual Property Organization (WIPO) and the National Center for Patents and Information (NCPI), Ministry of Economic Development and Trade of the Republic of Tajikistan, Dušanbe, Tadžikistan, Maj 2019.
5.15 Commercialisation, IPR and financing of innovation", Privredna komora Srbije, Novi Sad, Srbija, 2018
5.16 Framework for alternative Financing of Start-ups: Crowdfunding as good practice, moderation, Western Balkans Startup Forum, Niksic, Crna Gora, 2018
5.17 Doing Business with China: how and when?, moderation, ASTPPtoton Annual Conference, Lież, Belgija, 2018
5.18 Grupno finansiranje, Poljoprivredni fakultet Univerziteta u Beogradu, 2018.
5.19 Positive Developing Interaction of Innovative Universities and International Innovative Cities, 14 April 2018, Šenžen, Kina.
5.20 From Idea to Business, 2017, Ćingdao, Kina.
5.21 International Technology Transfer, Overseas Technology Transfer Demonstration Base and the National Patent Technology Exhibition Trading Center-Qingdao Sub Center, 2017, Ćingdao, Kina.
5.22 Academic Technology Transfer, Euro-Asia Economic Forum, 2017, Sian, China.
5.23 International S&T Cooperation Strategy and Innovation Mapping, Keynote Speech, APEC International Technology Transfer Seminar- STI and Connectivity, 2017, Sian, Kina.

5.24 Najbolje prakse u transferu tehnologije na nacionalnom i međunarodnom nivou, Privredna komora Beograda, 2017, Beograd.
5.25 Grupno finansiranje kao alternativni model finansiranja univerzitetskih projekata, Workshop on Investment Vehicles and Financial Instruments for Technology Transfer and Innovation, 2017, Beograd, Srbija.
5.26 Strateška upotreba IS za biznise, MIT Hackathon, Startit Centar, 2016, Beograd, Srbija.
5.27 Strateška upotreba IS, 12. Internacionalni simpozijum - Research and Applied Engineering Science, 2016, Beograd, Srbija.
5.28 Technology Transfer and The Case of Republic of Serbia, The Belt and Road Initiative, Šangaj, Kina, 2016.
5.29 Strateška upotreba intelektualne svojine, Kongres studenata biologije, ''SIMPLAST'', Zlatibor, Srbija, 2016.
5.30 Strateška upotreba IS za istraživače i biznise, letnja škola, Ecological Entrepreneurship: Innovation Management for Technical Products and Intellectual Property, Bor, Srbija, 2016.
5.31 IP Policy – Must Have Tool, Next Level Conference, Sofija, Bugarska, 2016.
5.32 TT iskustva iz Srbije, Regionalna konferencija o transferu tehnologije, Banja Luka, RS, BIH, 2016.
5.33 National IP Policies/Strategies, Rules and Regulations as a Framework for Institutional IP Policies in Universities and Research Institutions, National Conference on Intellectual Property Policies for Universities and Innovation, Sofija, Bugarska, 2015.
5.34 Regional Examples of Best Practices for Developing an Institutional IP Policy, National Conference on Intellectual Property Policies for Universities and Innovation, Sofija, Bugarska, 2015.
5.35 IP Ownership of Research Results, National Conference on Intellectual Property Policies for Universities and Innovation, Sofija, Bugarska, 2015.
5.36 Practical Drafting Exercise in Small Teams, IP Policy, National Conference on Intellectual Property Policies for Universities and Innovation, Sofija, Bugarska, 2015.

2.4. NAUČNA SARADNJA I SARADNJA SA PRIVREDOM POSLE IZBORA U ZVANJE

2.4.1. Učešće u međunarodnim projektima

1. Integrated capacity building and training programme for DANUBE area labour and business support organisations, local industry and entrepreneurs to enter innovative transnational value CHAINS as PEER-level collaboration partners, DanubePeerChains, Interreg Danube Transnational Programm, 2020-2023 (rukovodilac).
2. Business Opportunity Support System Upgrade for Strengthening European Innovation Ecosystem, ERASMUS PLUS strateški program, 2018-2020 (rukovodilac).
3. ”Colour catcher 2.0”, Climate KIC accelerator program phase III, European Institute of Technology, 2020 (rukovodilac).
4. ”Colour catcher balls”, Climate KIC accelerator program phase II, European Institute of Technology, 2019 (rukovodilac).
5. ”Multifunctional colour catcher balls”, Climate KIC accelerator program, European Institute of Technology, 2018 (rukovodilac).
6. Western Balkan Startup Academy, Open Regional Fund for South East Europe GIZ, 2017-2019 (član tima).
7. CROWDfunding to mainSTREAM innovation CrowdStream, Interreg Danube Transnational Programm, 2017-2019 (rukovodilac).
8. MOTIVATOR, USA Government, 2016-2017 (član tima).
9. Institucionalni okvir za razvoj treće misije Univerziteta u Srbiji, Ugovor br. 561655-EPP-1-2015-1-RS-EPPKA2-CBHE-SP (2015-2018). Projekat finansira Evropska Komisija u okviru ERASMUS PLUS programa (član tima).

2.4.2. Učešće u projektima finansiranim od strane nadležnog Ministarstva

1. ”Sustainable colour catcher 2.0”, Program ranog razvoja, Fond za inovacionu delatnost, 2020-2021 (rukovodilac).

2. ”Multifunctional colour catcher balls”, Program transfera tehnologije, Fond za inovacionu delatnost, 2017-2018 (član tima).

3. „Sinteza i karakterizacija novih funkcionalnih polimera i polimernih (nano)kompozita” evidencioni broj 172062, Ministarstvo za nauku i tehnološki razvoj Republike Srbije, Srbija (2015-2020) (član tima).

2.3. PET NAJZNAČAJNIJIH NAUČNIH OSTVARENJA KANDIDATA OD PRETHODNOG IZBORA U ZVANJE

1. Lučić Škorić Marija, Terzić Ivan, **Milosavljević Nedeljko**, Radetić Maja., Šaponjić Zoran, Radoičić Marija, Kalagasidis Krušić Melina, Chitosan-based microparticles for immobilization of TiO_2 nanoparticles and their application for photodegradation of textile dyes, *European Polymer Journal* 82 (2016) 57-70. ISSN: 0014-3057; IF(2015)=3,485. (Polymer Science 13/85).**Heterogenih citata: 19**

Ovaj rad se bavi uklanjanjem i fotokatalitičkom razgradnjom tekstilnih boja nanočesticama TiO_2 imobilisanim na mikročesticama na bazi hitozana. Mikročestice sastavljene od hitozana (Ch) i poli(metakrilne kiseline) (PMA) prvi put su proizvedene inverznom suspenzionom polimerizacijom. Mikrocestice su upotrebljene za imobilizaciju koloidnih nanočestica TiO_2, sintetisanih kiselom hidrolizom TiCl4. Da bi se procenila potencijalna primena mikročestica Ch / PMA / TiO_2 za tretman tekstilnih otpadnih voda, ispitivana je njihova fotokatalitička aktivnost praćenjem degradacije tri različite grupe anjonskih azo-boja u vodenim rastvorima pod izvorom simulacije sunčeve svetlosti. FTIR analizom pokazano je da su Ch i PMA ugrađeni u polimernu mrežu mikročestica. SEM i optička mikroskopija potvrdili su njihov sferni oblik. Pod osvetljenjem, mikročestice Ch / PMA / TiO_2 u potpunosti uklanjaju boje *C.I. Acid Orange 7, C.I. Acid Red 18, C.I. Acid Blue 113, C.I. Reactive Black 5, C.I. Direct Blue 78*, dok je stepen uklanjanja *C.I. Reactive Yellow 17* bio 75%. Utvrđeno je da je pH imao značajan uticaj na fotokatalitičku aktivnost mikročestica Ch / PMA / TiO_2. Povećanje pH rastvora sa kiselog na alkalno dovodi do smanjenja brzine fotodegradacije *C.I. Acid Orange 7* tokom prvih sati osvetljenja. Posle tri ciklusa osvetljenja, stepen uklanjanja *C.I. Acid Orange 7* održavan je na izuzetno visokom nivou (95% pri pH 5,60 i 100% pri pH 2,00 i 8,00), što ukazuje na to da mikročestice mogu ponovo da se upotrebe bez značajnog gubitka fotokatalitičke efikasnosti.

2. Lučić Škorić Marija, Nikodinović-Runić Jasmina, **Milosavljević Nedeljko**, Milašinović Nikola, O’Connor Kevin, Kalagasidis Krušić Melina, Antifungalni filmovi na bazi polihidroksialkanoata, *54. Savetovanje Srpskog hemijskog društva*, Beograd, Srbija 2017, 139-143. ISBN 978-86-7132-067-2

U ovom radu je ispitana mogućnost kontrolisanog otpuštanja nistatina iz filmova na bazi bakterijski sintetisanih polihidroksialkanoata sa srednjom dužinom lanca (mcl-PHA). Filmovi su dobijeni izlivanjem iz rastvora u kojima je inkorporiran nistatin i otparavanjem rastvarača. Prilikom izrade filmova variran je oblik i debljina filma, kao i masa inkorporiranog nistatina. Otpuštanje nistatina praćeno je u vodi, puferskom rastvoru i tečnosti koja simulira veštački znoj. Na kraju je ispitana antimikrobna aktivnost otpuštenog nistatina na sledećim gljivama: *Candida albicans ATCC 10231; Aspergillus fumigatus, Microsporum gypseum i Trichophyton mentagrophytes.*

3. Terzić Ivan, Ivanović Jasna, Žižović Irena, Lučić Škorić Marija, **Milosavljević Nedeljko**, Milašinović Nikola, Kalagasidis Krušić Melina, A novel chitosan gels: Supercritical CO_2 drying and impregnation with thymol, *Polymer Engineering and Science* 58(12) (2018), 2192-2199. ISSN: 0032-3888 IF (2018) = 1.920 (Polymer science, 40/87) **Heterogenih citata: 7**

Tehnologija natkritičnog ugljen-dioksida ($scCO_2$) korišćena je za pripremu funkcionalnih pH osetljivih aerogelova na bazi hitozana i njihovu impregnaciju timolom kao prirodnom bioaktivnom supstancom. Hidrogelovi na bazi hitozana, itakonske i metakrilne kiseline transformisani su u alkogelove i osušeni na vazduhu ili pomoću $scCO_2$ da bi se dobili ksero- i aerogelovi. Primenom 10 minuta statičkog i 120 minuta dinamičkog $scCO_2$) sušenja na 11 MPa i 45 ^oC, praćene dekompresijom brzine od 1 MPa / min, dobijen je aerogel sa povoljnom kinetikom bubrenja u poređenju sa kserogelom i aerogelom dobijenim pri drugim stepenima dekompresije i vremenu sušenja. Ovaj aerogel je uspešno impregniran timolom (do 4,6 mas.%) primenom superkritičnog $scCO_2$ pri 10 MPa i 35 °C. *In vitro* studije bubrenja u PBS na 37 °C ukazale su na veliki potencijal dobijenih gelova na bazi hitozana za topikalnu primenu timola koji je poznat po antimikrobnim, antioksidativnim i antiinflamatornim svojstvima.

4. Lučić Škorić Marija, Stanojković Lazar, **Milosavljević Nedeljko**, Kalagasidis Krušić Melina, Sorption of Textile Dyes From Textile Wastewater by Chitosan-based Hydrogel, *Tehnika* 1 (2018) 11-18 UDC: 615.454.1:678.741 ISSN 0040-2176. (Časopis saveza inženjera i tehničara Srbije).

Zbog sve više rizika koji se javljaju po životnu sredinu, veoma je važno prečistiti otpadne vode pre njihovog ispuštanja u vodotokove. Zato je jedan od izazova današnjih istraživanja dizajn jeftinog i ekološki prihvatljivog sorbenta, kao što je hidrogel na bazi hitozana, itakonske i metakrilne kiseline, koji može da ukloni širok spektar tekstilnih boja. U ovom radu je korišćen hidrogel za ispitivanje uklanjanja tri različite azo boje iz simulirane otpadne vode iz tekstilne industrije: *C.I. Basic Blue 9*, *C.I. Basic Red 1* i *C.I. Acid Orange 7*. Utvrđeno je da pH vrednost rastvora značajno utiče na sorpciju boja. Uklanjanje baznih boja je uspešno pri višim pH vrednostima, dok je sorpcija kisele boje moguća samo pri niskoj pH vrednosti rastvora. Simulirana otpadna voda iz tekstilne industrije je složen sistem sačinjen od različith soli, kiselina i polimera koji su prisutni pored boja za tekstil. Bez obzira na ove komponente, ostvaren je odličan kapacitet sorpcije (uklonjeno je više od 80% boje iz rastvora), što ovaj hidrogel čini atraktivnim za upotrebu u realnim sistemima.

5. Milosavljević Nedeljko, Lučić Škorić Marija, Kalagasidis Krušić Melina, DYE SCAVENGER AND METHOD OF PRODUCTION OF DYE SCAVENGER, International Filing Date 10.12.2018, International Application No. PCT/RS2018/000019, Publication Date 18.06.2020, Publication Number WO/2020/122743

OBLAST TEHNIKE

Predmetni pronalazak se odnosi na sprečavanje vezivanja boja za tkaninu koje su prisutne u mašini tokom procesa pranja veša primenom multifunkcionalnog hvatača boja (hidrogela), kao i na sampostupak proizvodnje istog. Prema međunarodnoj klasifikaciji patenata pronalazak ima sledeće oznake: C11D 3/00;C11D 3/37; C11D 3/60.

TEHNIČKI PROBLEM

Problem koji se rešava predmetnim pronalaskom jeste sposobnost da se adsorbuje/apsorbuje i/ili zarobi višak boje koji je prisutan u vodi tokom pranja sprečavajući vezivanje boja za bilo koju tkaninu koja je prisutna u mašini tokom procesa pranja.

OPIS PRONALSKA

Predmetni pronalazak se odnosi na multifunkcionalni hidrogel koji kombinuje prednosti hvatača boja, omekšivača, belila i/ili antibakterijskog agensa. Sam hvatač boja vezuje, adsorbuje/ apsorbuje ili hvata boje koje su prisutne u vodi tokom procesa pranja veša i na taj način sprečava njihovo vezivanje za tkaninu. On predstavlja hvatač boja kome za uspešno delovanje nije potreban poseban substrat ili nosač i koji vrlo brzo zarobljava otpuštene boje, što je naročito važno kod kraćih ciklusa pranja (npr. 14, 30 i 44 minuta na 30 ili 40 °C). Hidrogel je hvatač boja koji je nerastvoran u vodi. Ta nerastvorljivost u vodi se postiže fizičkim i/ilil hemijskim umrežavanjem monomera i/ili polimera dodatkom malih molekula (umreživača ili agensa za umrežavanje) ili polimerizacijom i kopolimerizacijom multifunkcionalnih monomera i prirodnih/sintetskih polimera. U sastav hidrogela ulaze prirodni i/ili sintetski polimeri, monomeri, umreživači, aditivi i punioci. Prirodni polimeri, pogodni za izradu hidrogela, su: natrijum-

alginat, celuloza, lignin, bakterijska nanoceluloza, želatin (tip A i tip B) i drugi proteini, skrob, hitin, hitozan, pektin, prirodne gume, derivati pomenutih polimera i drugi. Dok od sintetskih polimera pogodni su: akrilni polimeri, vinilni polimeri, poli(etilen glikoli), polihidroksialkanoati, polilaktidi, polikarpolaktoni, poli(vinil alkohol), njihovi derivati i drugi.

2.4. ANALIZA RADOVA KOJI KANDIDATA KVALIFIKUJU ZA IZBOR U ZVANJE VIŠI NAUČNI SARADNIK

Naučna aktivnost dr Nedeljka Milosavljevića se najvećim delom odnosi na sintezu hidrogelova osetljivih na spoljne stimulanse, ispitivanju njihove strukture, karakterizaciji i primenu u medicini, farmaciji, poljoprivredi, itd. Posebna pažnja je posvećena primeni hidrogelova za kontrolisano otpuštanje aktivnih supstanci i prečišćavanju otpadnih voda.

Sinteza i svojstva hibridnih polimernih mreža (HPM) hitozana i poli(vinil alkohola) (PVA) je prikazana u radovima 1.1.1 i 4.2.1. Sinteza HPM je izvedena u dva stupnja, pri čemu je varirana koncentracija umreživača i sadržaj PVA. Pokazano je da u prvom stupnju dolazi do jonskog umrežavanja između NH_3^+ grupa hitozana i COO^- grupa itakonske kiseline, dok u drugom stupnju dolazi do hemijskog umreženja između hitozana i PVA uz glutar aldehid kao umreživač. Utvrđeno je da sintetisane HPM imaju poroznu strukturu, da koncentracija umreživača i sadržaj PVA značajno utiču na stepen bubrenja, termička i mehanička svojstva HPM. Dodatak PVA pomera degradaciju ka višim temperaturama što povećava termičku stabilnost sintetisanih HPM, a sa porastom koncentracije umreživača i sadržaja PVA poboljšavaju se mehanička svojstva HPM.

U radovima 1.1.2, 3.2.7 i 4.1.1 prikazana je sinteza i karakterizacija kopolimernih hidrogelova hitozana (Ch), itakonske (IK) i metakrilne kiseline (MK), kao i njihova primena kao sorbenta za uklanjanje jona metala iz vodenih rastvora. Utvrđeno je da Ch/IK/MK hidrogelovi pokazuju pH osetljivost zahvaljujući prisustvu karboksilnih grupa iz itakonske i metakrilne kiseline i amino grupa iz hitozana. Dodatak metakrilne kiseline je poboljšao mehanička svojstva hidrogelova hitozana, tako da su dobijeni hidrogelovi sa poboljšanim mehaničkim svojstvima i podesivim bubrenjem.

Mogućnost primene Ch/IK/MK hidrogelova za uklanjanje kadmijuma, cinka i bakra iz vodenih rastvora je prikazana u radovima 1.1.3, 1.1.5, 1.2.5 i 4.1.4. Pokazano je da se jon metala veže preko $–NH_2$ i –OH grupa hitozana i karboksilnih grupa koje potiču iz ugrađenih kiselina i da kapacitet adsorpcije zavisi od pH sredine, mase adsorbenta, početne koncentracije metala u rastvoru i temperature. Mehanizam sorpcije ispitanih jona metala se pretežno odvija preko pseudo-drugog reda, a vrednosti energije aktivacije ukazuju da je u pitanju fizisorpcija. Desorpcija metala je u potpunosti izvedena (100%) sa 0,01 mol/L HNO_3 i 0,1 mol/L HNO_3. Tokom tri uzastopna procesa adsorpcije/desorpcije zadržana je efikasnost desorpcije od 100%. Mogućnost uklanjanja jona teških metala pomoću hidrogelova na bazi akrilamida i natrijum-metakrilata je takođe ispitana, a dobijeni rezultati su prikazani u radovima 1.2.2 i 1.2.3.

U radovima 1.3.1, 2.1.1, 3.1.1, 4.1.2 i 4.1.3. prikazana je sinteza i karakterizacija semi-interpenetrirajućih mreža (semi-IPM) hitozana sa poli(etilen glikolom) (PEG) i poli(*N*-vinil-2-pirolidonom) (PVP), kao interpenetrantima. Uvrđeno je da bubrenje semi-IPM zavisi od pH vrednosti rastvora i koncentracije umreživača bez obzira na vrstu ugrađenog interpenetranta. SEM analiza je pokazala da sintetisane semi-IPM imaju poroznu strukturu, a prema veličini pora mogu se klasifikovati kao superporozne. Utvrđeno je da na termičku stabilnost i mehanička svojstva semi-IPM utiče stepen umreženja, sadržaj i vrsta interpenetranta. FTIR analizom je pokazano moguće obrazovanje vodoničnih veza između hitozana i interpenetranata. Utvrđeno je da su interakcije između hitozana i PVP mnogo jače nego interakcije između hitozana i PEG.

Radovi 1.1.4, 1.1.9, 1.2.1, 1.3.3, 1.3.4, 4.1.6., 4.2.3 i 4.2.4 se odnose na sintezu i karakterizaciju kopolimernih hidrogelova itakonske kiseline (IK) i *N*-izopropilakrilamida (NiPAAm) i njihovu primenu za imobilizaciju lipaze iz *Candida rugosa*. Pokazano je da sintetisani hidrogelovi imaju poroznu strukturu i da bubrenje svih uzoraka u velikoj meri zavisi od sastava hidrogela, koncentracije lipaze, kao i od

medijuma za bubrenje. Utvrđeno je da imobilizacija lipaze „*in situ*“ polimerizacijom zavisi od početne koncentracije lipaze, sastava hidrogelova i stepena umreženja. Da bi se definisali osnovni parametri za primenu imobilisane lipaze kao biokatalizatora, određeni su pH i temperaturni optimum, a zatim je ispitana stabilnost lipaze iz *Candida rugosa* na skladištenje. Utvrđeno je da specifična aktivnost imobilisane lipaze raste sa porastom sadržaja itakonske kiseline i lipaze u hidrogelu, kao i da je stabilnost na skladištenje imobilisane lipaze bolja u odnosu na nativnu lipazu. Imobilisana lipaza je zatim primenjena kao katalizator u reakciji sinteze estra *n*-amil izobutirata.

U radovima 1.1.6, i 4.1.5 ispitana je mogućnost primene kopolimernih hidrogelova itakonske kiseline i *N*-izopropilakrilamida za kontrolisano otpuštanje terapeutskih proteina, a kao model supstanca je korišćena lipaza iz *Candida rugosa.* Ispitano je bubrenje ovih hidrogelova simulacijom pH vrednosti u gastrointestinalnom (GI) traktu. Pokazano je da mali stepen bubrenja kopolimernih P(NiPAAm/IK) hidrogelova na 37 °C pri pH 2,20 sprečava njegovu denaturaciju i obezbeđuje očuvanje proteina u kiseloj sredini. U neutralnoj i slabo baznoj sredini, koja odgovara uslovima u donjem delu GI trakta, stepen bubrenja hidrogela je mnogo veći što omogućava lako otpuštanje proteina. Ustanovljeno je da se podešavanjem sastava i stepena umreženja mogu sintetisati hidrogelovi pogodni za kontrolisano otpuštanje proteina.

Radovi 1.1.7, 1.1.8, 1.2.4, 3.2.1, 3.2.3, 3.2.8, 4.2.5 i A1.1.1 se odnose na sintezu TiO_2/hidrogel nanokompozita i njihovu primenu za fotolitičku degradaciju tekstilnih boja iz vodenih rastvora. Korišćene su dve vrste nanočestica titan-dioksida, sveže sintetisane nanočestice TiO_2 dobijene kiselom hidrolizom titan-tertahlorida i komercijalno dostupne Degussa P25. Za imobilizaciju nanočestica titan-dioksida korišćene su dve metode, „*in situ*“ i „dip coating“. Ispitana je mogućnost fotokatalitičke degradacije više boja za tekstil. Uočeno je da sintetisane nanočestice pokazuju bolju fotokatalitičku aktivnost u odnosu na komercijalno dostupne. Takođe, utvrđeno je da je moguća višekratna upotreba TiO_2/hidrogel nanokompozita uz očuvanje fotokatalitičke aktivnosti.

Rad 1.2.1 bavi se mogućnošću primene natkritičnog ugljenik(IV)-oksida za dobijanje i impregnaciju aerogelova na bazi hitozana. Hidrogelovi hitozana i metakrilne i itakonske kiseline dobijeni kopolimerizacijom preko slobodnih radikala i umrežavanjem *N,N'*-metilenbisakrilamidom su tretirani etanolom da bi se uklonila voda, a zatim je izvedeno sušenje dobijenih alkogelova u natkritičnom ugljenik(IV)-oksidu (45 °C, 15 MPa) i na vazduhu radi poređenja. Prilikom sušenja varirano je vreme sušenja i brzina dekompresije nakon sušenja. Takođe, ispitana je impregnacija aerogela timolom primenom natkritičnog ugljenik(IV)-oksida. Na isti način je impregnisan i kserogel radi poređenja. *In vitro* studija bubrenja u PBS na 37 °C ukazala je na veliki potencijal dobijenih gelova za topikalnu primenu timola koji je poznat po antimikrobnim, antioksidativnim i antiinflamatornim svojstvima.

U radu 2.1.1. ispitana je mogućnost primene hidrogelova hitozana, itakonske i metakrilne kiseline za prečišćavanje otpadnih voda iz tekstilne industrije. Uklanjanje boja je praćeno u rastvoru koji simulira standardnu otpadnu vodu, a kao model boje korišćene su boje za bojenje vune, pamuka, najlona (*C.I.* Acid Orange 7 i *C.I.* Basic Red 1), kao i bazna boja Methylene Blue. Praćen je uticaj temperature, pH vrednosti i sadržaja saharoze u simuliranoj otpadnoj vodi na efikasnost uklanjanja boja.

Mogućnost kontrolisanog otpuštanja nistatina iz filmova na bazi bakterijski sintetisanih polihidroksialkanoata sa srednjom dužinom lanca (mcl-PHA) je ispitana u radu 3.1.1. Filmovi su dobijeni izlivanjem iz rastvora u kojima je inkorporiran nistatin i otparavanjem rastvarača. Prilikom izrade filmova variran je oblik i debljina filma, kao i masa inkorporiranog nistatina. Otpuštanje nistatina praćeno je u vodi, puferskom rastvoru i tečnosti koja simulira veštački znoj. Na kraju je ispitana antimikrobna aktivnost otpuštenog nistatina na sledećim gljivama: *Candida albicans ATCC 10231; Aspergillus fumigatus, Microsporum gypseum i Trichophyton mentagrophytes.*

TEHNIČKI PROBLEM koji se rešava patentom 4.1.1 jeste sposobnost da se adsorbuje/apsorbuje i/ili zarobi višak boje koji je prisutan u vodi tokom pranja sprečavajući vezivanje boja za bilo koju tkaninu koja je prisutna u mašini tokom procesa pranja. OBLAST TEHNIKE: Predmetni pronalazak se odnosi na sprečavanje vezivanja boja za tkaninu koje su prisutne u mašini tokom procesa pranja veša primenom multifunkcionalnog hvatača boja (hidrogela), kao i na sam postupak proizvodnje istog. Prema međunarodnoj klasifikaciji patenata pronalazak ima sledeće oznake: C11D 3/00; C11D 3/37; C11D 3/60.

OPIS PRONALSKA: Predmetni pronalazak se odnosi na multifunkcionalni hidrogel koji kombinuje prednosti hvatača boja, omekšivača, belila i/ili antibakterijskog agensa. Sam hvatač boja vezuje, adsorbuje/ apsorbuje ili hvata boje koje su prisutne u vodi tokom procesa pranja veša i na taj način sprečava njihovo vezivanje za tkaninu. On predstavlja hvatač boja kome za uspešno delovanje nije potreban poseban substrat ili nosač i koji vrlo brzo zarobljava otpuštene boje, što je naročito važno kod kraćih ciklusa pranja (npr. 14, 30 i 44 minuta na 30 ili 40 °C). Hidrogel je hvatač boja koji je nerastvoran u vodi što se postiže fizičkim i/ilil hemijskim umrežavanjem monomera i/ili polimera dodatkom malih molekula (umreživača ili agensa za umrežavanje) ili polimerizacijom i kopolimerizacijom multifunkcionalnih monomera i prirodnih/sintetskih polimera. U sastav hidrogela ulaze prirodni i/ili sintetski polimeri, monomeri, umreživači, aditivi i punioci.

2.5 CITIRANOST NAUČNIH RADOVA (bez autocitata) PREMA BAZI WEB OF SCIENCE I SCOPUS *(na dan 27. maj 2021. godine)*

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KVALITATIVNA OCENA NAUČNIH REZULTATA

3. KVALITET NAUČNIH REZULTATA

3.1. Naučni nivo, značaj i primenjivost rezultata

Naučno-istraživački rad kome je Kandidat posvećen primarno pripada oblasti tehničko-tehnoloških nauka, a vezan je najviše za polimerne materijale. Istraživanja dr Nedeljka Milosavljevića se najvećim delom odnose na sintezu hidrogelova osetljivih na spoljne stimulanse, karakterizaciju i primenu u medicini, farmaciji, poljoprivredi, itd. Posebna pažnja je posvećena primeni hidrogelova za kontrolisano otpuštanje aktivnih supstanci i prečišćavanju otpadnih vodi. Poslednjijh par godina akcenat je na razvoju polimernih sistema baziranih na prirodnim polimerima i supstancama koje bi doprinele kvalitetu života ljudi i unapređenju zaštite životne sredine.

Od izbora u zvanje viši naučni saradnik do trenutka podnošenja Izveštaja, dr Nedeljko Milosavljević je publikovao radove sledećih kategorija: 1×M21, 1×M22, 1×M51, 1×M63 i 1×M93. Naučnu relevantnost rezultata svog naučno-istraživačkog rada dr Nedeljko Milosavljević prevashodno je dokazao publikovanjem radova u međunarodnim časopisima, kao i publikovanjem međunarodne patentne prijave i daljim ulaskom u nacionalne faze na teritoriji Evrope, Kine, SAD, Rusije, Indije i Kanade. Naučni radovi kandidata su na dan 27. maja 2021. godine citirani 379 puta, bez autocitata autora i svih koautora prema SCOPUS bazi (h indeks 11). Citiranost radova Kandidata ukazuje na aktuelnost, uticajnost i verodostojnost objavljenih rezultata i zaključaka.

Rezultati prikazani u okviru doktorske disertacije dali su značajan doprinos daljem naučno-istraživačkom radu u ovoj oblasti. Posebno je značajno što su neki od rezultata istraživanja uobličeni u okviru međunarodne patentne prijave koji je dalje licenciran Dr. Knight doo.

3.2. Uticajnost, citiranost i parametri kvaliteta časopisa

U svom dosadašnjem naučno-istraživačkom radu, dr Nedeljko Milosavljević je publikovao 22 naučna rada, od toga je 20 radova objavljeno u časopisima međunarodnog značaja (deset u časopisima kategorije M21, šest kategorije M22 i četiri kategorije M23), dva rada u časopisu nacionalnog značaja (M51), kao i dvadeset četiri naučna saopštenja, od čega jedanaest na skupovima međunarodnog značaja (dva štampana u celini (M33) i devet u izvodu (M34)), dvanaest na skupovima nacionalnog značaja (osam u celini (M63) i pet u izvodu (M64)) i jednog objavljenog patenta (M93).

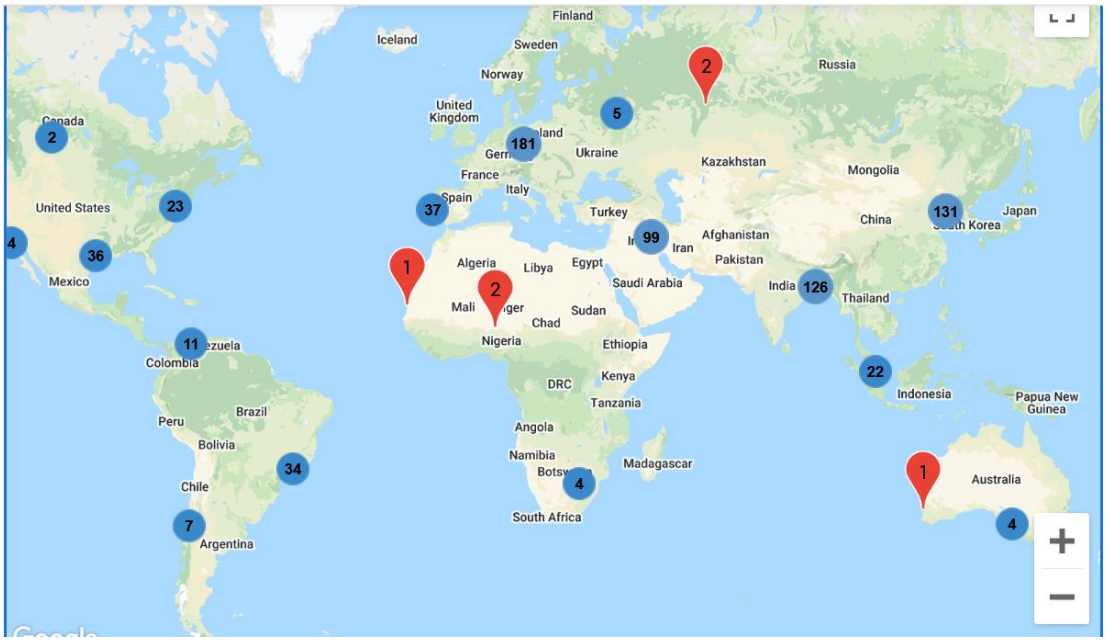
Prema SCOPUS bazi, Kandidat ima ukupno 437 citata iz 20 dokumenata (h indeks 11), kao i 379 heterogenih citata (h indeks 11). Najcitiraniji rad ima 60 heterogenih citata prema SCOPUS bazi podataka (Milosavljević Nedeljko, Ristić Mirjana, Perić-Grujić Aleksandra, Filipović Jovanka, Štrbac Svetlana, Rakočević Zlatko, Kalagasidis Krušić Melina, Removal of Cu2+ ions using hydrogels of chitosan, itaconic and methacrylic acid: FTIR, SEM/EDX, AFM, kinetic and equilibrium study, Colloids and Surfaces A: Physicochemical and Engineering Aspects 388 (2011) 59-69. ISSN: 0927-7757 IF (2011)=2,236 (Chemistry, Physical 61/134)). Ukupan zbir impakt faktora časopisa objavljenih radova je 40,708.

Rezultati istraživanja na kojima je dr Milosavljević učestvovao u periodu posle izbora u prethodno zvanje su publikovani u vidu 3 naučna rada, 1 saopštenja i 1 objavljenog patenta na međunarodnom nivou, od čega dva u međunarodnim časopisima (1 M21 i 1 M22) i jedan rad u časopisu nacionalnog značaja (M51). Najcitiraniji rad iz perioda koji se uzima za evaluaciju pri izboru u zvanje Viši naučni saradnik ima 19 citata prema SCOPUS bazi podataka (Lučić Škorić Marija., Terzić Ivan, Milosavljević Nedeljko, Radetić Maja, Šaponjić Zoran, Radoičić Marija, Kalagasidis Krušić Melina, Chitosan-based microparticles for immobilization of TiO2 nanoparticles and their application for photodegradation of textile dyes, European Polymer Journal 82 (2016) 57-70. ISSN: 0014-3057; IF(2015)=3,485). Ukupni zbir IF časopisa u kojima je objavio radove nakon izbora u zvanje Viši naučni saradnik iznosi 5,405.

Međunarodni časopisi u kojima su objavljeni radovi kandidata, pre izbora u zvanje, su: *Journal of Hazardous Materials* (M21 IF(2011)=4,173 Engineering, Environmental 6/45), *International Journal of Pharmaceutics* (M21 IF(2013)=3,785 Pharmacology & Pharmacy 45/256), *Polymer Composites* (M21 IF (2014)=1,632 Materials Science, Composites 7/24), *Separation and Purification Technology* (M21 IF (2014)=3,091 Engineering, Chemical 16/135), *The Scientific World Journal*, (M21 IF(2013)=1,219 Multidisciplinary Sciences 16/55), *Polymer Bulletin* (M22 IF(2011)=1,532 Polymer Science 33/79), *Water Air Soil Pollution* (M22 IF(2013)=1,685 Environmental Sciences 106/216), *Environmental Progress and Sustainable Energy* (M22 IF (2014)=1,403 Engineering, Chemical 66/135), *Polymer Engineering and Science* (M22 IF (2014)=1,520 Engineering, Chemical 61/135), *Colloids and Surfaces A: Physicochemical and Engineering Aspects* (M22 IF (2011)=2,236 Chemistry, Physical 61/134), *BioMed Research International* (M23 IF(2014)=1,579, Biotechnology & Applied Microbiology 107/163), *Hemijska industrija* (M23 IF(2011)=0,205 Engineering, Chemical 120/123).

Međunarodni časopisi u kojima su objavljeni radovi kandidata, nakon izbora u zvanje, su:
European Polymer Journal (M21 IF(2015)=3,485 Polymer Science 13/85), *Polymer Engineering and Science* (M22 IF (2018) = 1.920 Polymer science, 40/87), *Tehnika* (M51 Časopis saveza inženjera i tehničara Srbije).

Većina radova u kojima su citirane publikacije su objavljeni u vodećim međunarodnim časopisima. Pozitivna citiranost radova ukazuje na aktuelnost, uticajnost i ugled objavljenih radova. Prilikom prikazivanja pozicije časopisa u određenoj oblasti poštovana je klasifikacija u periodu od tri godine koja se odnosi na godinu pre, godinu publikovanja i godinu posle publikovanja.



Slika 1. Rasprostranjenost citiranosti kandidata u svetu (Publons)

3.3. Ocena samostalnosti kandidata

U toku dosadašnjeg naučno-istraživačkog rada, dr Nedeljko Milosavljević je pokazao veliku posvećenost i izuzetnu samostalnost u realizaciji dodeljenih zadataka, u postavljanju hipoteza, kreiranju i realizaciji eksperimenata, interpretaciji dobijenih rezultata, kao i u pisanju radova. Takođe, uspešno je pokazao sposobnost u ispitivanjima u novim naučnim oblastima, u razvoju naučne saradnje u zemlji i inostranstvu i u realizaciji multidisciplinarnih projekata. Objavljena su 22 rada u naučnim časopisima, od toga je 20 radova objavljeno u časopisima međunarodnog značaja (10 u časopisima kategorije M21, 6 kategorije M22 i 4 kategorije M23), 2 rada u časopisu nacionalnog značaja (M51), kao i 24 naučna saopštenja, od čega 11 na skupovima međunarodnog značaja (2 štampana u celini (M33) i 9 u izvodu (M34)), 12 na skupovima nacionalnog značaja (8 u celini (M63) i 5 u izvodu (M64)) i 1 objavljen patent na međunarodnom nivou (M93). Ukupno, radovi dr Nedeljka Milosavljevića su citirani 379 puta (h indeks je 11) bez autocitata. Na 8 radova kategorije M20 je prvi autor i drugi autor na 8 radova kategorije M20. Prosečan broj autora po radu za ukupno analiziranu bibliografiju iznosi 5,24. Nedeljko Milosavljević je učestvovao/učestvuje na 16 nacionalnih i međunarodnih projekata, od kojih je na 7 projekata bio rukovodilac (Prilog). Potvrda samostalnosti dr Nedeljka Milosavlejivća je i učestvovanje u radu komisije za ocenu i odbranu doktorske disertacije kandidata Jelene Spasojević pod nazivom „Radijaciono-hemijska sinteza termo- i pH-osetljivih antibakterijskih srebro/poli(N-izopropilakrilamid-ko-itakonska kiselina) nanokompozita" (2016). Kao dokaz, priložena je odluka o imenovanju Komisije za ocenu i odbranu doktorske disertacije. Recenzirao je radove iz kategorije M20 (Polymer Bulletin i Materials Science and Engineering B), (Prilog).

Dr Nedeljko Milosavljević je aktivno učestvovao u edukaciji studenata. Održao je niz predavanja u zemlji i inostranstvu na temu transfera tehnologije i intelektualne svojine. Učestvovao je u izradi završnih radova, diplomskih radova koji su urađeni u okviru projekta OI172062 i odbranjeni na Tehnološko-metalurškom fakultetu Univerziteta u Beogradu.

3.4. Angažovanost u formiranju naučnih kadrova

Kao istraživač-saradnik i naučni-saradnik u Inovacionom centru Tehnološko-metalurškog fakulteta Univerziteta u Beogradu, Nedeljko Milosavljević je aktivno učestvovao i pomagao studentima u eksperimentalnom radu pri izradi pet diplomskih radova na osnovnim studijama: Milica Stevanović„Sinteza i karakterizacija hidrogelova na bazi *N*-izopropilakrilamida, itakonske kiseline i hitozana", TMF, 2007, mentor J. Filipović; Dragana Pijetlović „Ispitivanje mogućnosti primene hidrogelova hitozana za otpuštanje lekovitih supstanci", TMF, 2008, mentor M. Kalagasidis Krušić; Ljiljana Pavlović „Uticaj pH rastvora pri sintezi na svojstva hidrogelova itakonske kiseline i *N*-izopropilakrilamida" TMF, 2009, mentor M. Kalagasidis Krušić; Milenica Đorđević „Uticaj temperature i pH na bubrenje hidrogelova hitozana i metakrilne kiseline" TMF, 2009, mentor M. Kalagasidis Krušić; Marija Milosavljević „*In vitro* ispitivanje brzine otpuštanja diazepama i paracetamola iz hidrogelova na bazi hitozana" TMF, 20011, mentor M. Kalagasidis Krušić), kao i izradi jedne doktorske teze dr Marije Lučić Škorić „Uklanjanje boja za tekstil iz vode fotokatalitičkom degradacijom u prisustvu nanočestica titan-dioksida imobilisanih na hidrogelove hitozana i alginata", TMF, mentor M. Kalagasidis Krušić.

Takođe, bio je član Komisije za odbranu doktorske disertacije dr Jelene Spasojević „Radijaciono hemijskasinteza termo- i pH-osetljivih antibakterijskih srebro/poli(N-izopropilakrilamid-ko-itakonska kiselina) nanokompozita". Učestvovao je u realizaciji naučne saradnje Tehnološko-metalurškog fakulteta Univerziteta u Beogradu sa Institutom za biološka istraživanja „Siniša Stanković'' Univerziteta u Beogradu, Institutom za molekularnu genetiku Univerziteta u Beogradu i Fakultetom nauke i umetnosti, Adnan Menders Univerziteta iz Turske.

3.5. Normiranje broja poena prema broju koautora

Dr Nedeljko Milosavljević je u dosadašnjem naučno-istraživačkom radu publikovao ukupno 47 bibliografskih jedinica i to: 10 naučnih radova u vrhunskim međunarodnim časopisima (M21), 6 naučnih radova u istaknutim međunarodnim časopisima (M22), 4 naučna rada u međunarodnim časopisima (M23), 2 naučna rada u vodećem časopisu nacionalnog značaja (M51), 2 saopštenja na skupovima međunarodnog značaja, štampana u celini (M33), 9 saopštenja na skupovima međunarodnog značaja, štampana u izvodu (M34), 8 saopštenja na skupovima nacionalnog značaja, štampana u celini (M63), 5 saopštenja na skupu nacionalnog značaja, štampana u izvodu (M64) i 1 objavljen patent na međunarodnom nivou (M93).
Prosečan broj autora po radu za ukupno analiziranu bibliografiju iznosi 5,24 i to:
- M20 autor 8 i koautor 12 radova prosek autora 5,75
- M30 autor 1 i koautor 10 radova prosek autora 6,30
- M50 autor 2 rada prosek autora 3,50
- M60 autor 7 i koautor 6 radova prosek autora 4,53
- M90 autor 1 publikovanog patenta prosek autora 3,00

Dr Nedeljko Milosavljević je publikovao 5 bibliografskih jedinica koje ga kvalifikuju za izbor u naučno zvanje VIŠI NAUČNI SARADNIK (integralno od izbora u prethodno zvanje), i to jedan naučni rad u vrhunskom međunarodnom časopisu (M21), 1 naučni rad u istaknutom međunarodnom časopisu (M22), 1 naučni rad u vodećem časopisu nacionalnog značaja (M51), 1 saopštenje na skupu nacionalnog značaja, štampano u celini (M63), 1 objavljen patent na međunarodnom nivou (M93).
Prosečan broj autora po radu za ukupno analiziranu bibliografiju iznosi 4,00 i to:
- M20 koautor 2 rada, prosek autora 7,00
- M50 koautor 1 rada, prosek autora 4,00
- M60 koautor 1 rada, prosek autora 6,00
- M90 autor 1 publikovanog patenta, prosek autora 3,00

3.6. Rukovođenje projektima, potprojektima i projektnim zadacima

Tokom dosadašnjeg rada dr Milosavljević je konstantno angažovan na realizaciji različitih nacionalnih i međunarodnih projekata. Kandidat je rukovodio sledećim projektima od prethodnog izbora u zvanje:

1. Integrated capacity building and training programme for DANUBE area labour and business support organisations, local industry and entrepreneurs to enter innovative transnational value CHAINS as PEER-level collaboration partners, DanubePeerChains, Interreg Danube Transnational Programm, 2020-2023.
2. Business Opportunity Support System Upgrade for Strengthening European Innovation Ecosystem, ERASMUS PLUS strateški program, 2018-2020.
3. ”Colour catcher 2.0”, Climate KIC accelerator program phase III, European Institute of Technology, 2020.
4. ”Colour catcher balls”, Climate KIC accelerator program phase II, European Institute of Technology, 2019.
5. ”Multifunctional colour catcher balls”, Climate KIC accelerator program, European Institute of Technology, 2018.
6. CROWDfunding to mainSTREAM innovation CrowdStream, Interreg Danube Transnational Programm, 2017-2019

4. OSTALI POKAZATELJI USPEHA U NAUČNOM RADU

4.1. Nagrade i priznanja za naučni rad dodeljen od strane relevantnih naučnih institucija i društava

Dobitnik je nagrade ”IUPAC Poster Prize” na XLVI Savetovanju Srpskog hemijskog društva održanom u Beogradu 2008.

4.2. Patenti

Kandidat je podneo međunarodnu patentnu prijavu DYE SCAVENGER AND METHOD OF PRODUCTION OF DYE SCAVENGER, 10.12.2018, broj prijave PCT/RS2018/000019. Međunarodna patentna prijava je objavljena 18.06.2020 pod brojem WO/2020/122743. Do 10.06.2021. podnete su i regionalne patentne prijave za teritorije Evropa, Kina, Indija, Rusija, SAD i Kanada. Patent je u vlasništvu Univerziteta u Beogradu, a Dr. Knight doo ima potpisan ekskluzivan ugovor o licenci sa Univerzitetom u Beogradu.

4.3. Članstvo u naučnom društvu

Dr Nedeljko Milosavljević je član sledećih društava i udruženja:

- Udruženje Alijansa za biznis i inovacije
- Udruženje Svi za nauku
- Savet za omladinsko preduzetništvo
- Savet za saradnje nauke i privrede
- Asocijacija menadžera univerzitetskih tehnologija (AUTM, SAD),
- Međunarodna mreža za transfer tehnologije (ITTN, Kina),
- World Business Angels Investment Forum (WBAF, Turska),
- Pan-evropska asocijacija za transfer tehnologije (ASTP, Evropa)
- Network for International Cooperation on Technology Commercialization (NICTC, Kina)
- Belt and Road Medical Device Innovation and Application Alliance (BRMDIA, Kina.

4.4. Recenzije projekata

Dr Milosavljević je angažovan od 2020. godine kao recenzent u okviru EIC akceleratora European Innovation Council-a Evropske komisije. Za period 2020-2021 uradio je recenzije 20 projekata pri čemu ni jedan projekat nije bio manji od 3 miliona evra. Zbog potpisanog ugovora u poverljivosti podataka nije moguće javno izlistati imena projekata.

KVANTITATIVNA OCENA NAUČNIH REZULTATA

Pregled ukupnih koeficijenata naučne kompetentnosti dr Nedeljka Milosavljevića posle izbora u naučno zvanje viši naučni saradnik je prikazan u Tabeli 1.

Tabela 1: Pregled ukupnih koeficijenata naučne kompetentnosti

Naziv grupe	**Vrsta rezultata**	**Oznaka rezultata**	**Vred. koef.**	**Br. radova**	**Σ**
M20	M21 - rad u vrhunskom časopisu međunarodnog značaja		8	1	8
	M22 - rad u časopisu međunarodnog značaja		5	1	5
M50	M51 - rad u vodećem časopisima nacionalnog značaja		2	1	2
M60	M63 - Saopštenja sa skupova nacionalnog značaja štampana u celini		0,5	1	0,5
M90	M93 - Objavljen patent na međunarodnom nivou		9	1	9
M100	M106 – Učešće u radu žirija		0,5	3	1,5
Ukupno					26,0

Za reizbor u zvanje, kandidat je obavezan da u periodu od prethodnog izbora ostvari najmanje polovinu od kvantitativnog minimuma naučnoistraživačkih rezultata potrebnih za izbor u to zvanje

Diferencijalni uslov od prvog izbora u zvanje viši naučni saradnik do izbora u zvanje viši naučni saradnik	**Neophodno**	**Ostvareno**
Ukupno	25	26
Obavezni (1): M10+M20+M31+M32+M33+M41+M42+M51+M80+M90+M100	20	25,5
Obavezni (2)* M21+M22+M23+M81-85+M90-96+M101-103+M108	11	22
M21+M22+M23	11	13
M81-85+M90-96+M101-103+M108	7	9

ZAKLJUČAK

Na osnovu uvida u ukupne naučno-istraživačke i stručne rezultate i detaljne analize dosadašnjeg rada i postignutih rezultata dr Nedeljka Milosavljevića, Komisija smatra da je kandidat dao značajan doprinos

razvoju u oblastima nauke kojima se bavi, a posebno u sintezi i primeni hidrogelova za prečišćavanje otpadnih voda. Dr Milosavljević je objavio 22 rada u naučnim časopisima, od toga je 20 radova objavljeno u časopisima međunarodnog značaja (10 u časopisima kategorije M21, 6 kategorije M22 i 4 kategorije M23), 2 rada u časopisu nacionalnog značaja (M51), kao i 24 naučna saopštenja, od čega 11 na skupovima međunarodnog značaja (2 štampana u celini (M33) i 9 u izvodu (M34)), 12 na skupovima nacionalnog značaja (8 u celini (M63) i 5 u izvodu (M64)) i 1 objavljen patent na međunarodnom nivou (M93). Ukupno, radovi dr Nedeljka Milosavljevića su citirani 379 puta (h indeks je 11) bez autocitata. Na 8 radova kategorije M20 je prvi autor i drugi autor na 8 radova kategorije M20. Prosečan broj autora po radu za ukupno analiziranu bibliografiju iznosi 5,24. Nedeljko Milosavljević je učestvovao/učestvuje na 16 nacionalnih i međunarodnih projekata, od kojih je na 7 projekata bio rukovodilac. Potrebno je istaći doprinos kandidata u međunarodnoj naučnoj literaturi (ukupno 19 radova u međunarodnim časopisima, citiranih 127 puta), učešćem na međunarodnim i domaćim naučnim i stručnim skupovima, kao i radom sa studentima na Katedri za organsku hemijsku tehnologiju u okviru njihovih diplomskih, završnih, master i doktorskih radova, od kojih je u jednom bio član Komisije za ocenu i odbranu doktorske disertacije kandidata Jelene Spasojević, Recenzirao je radove iz kategorije M20. Aktivno je učestvovao u edukaciji studenata. Održao je niz predavanja u zemlji i inostranstvu na temu transfera tehnologije i intelektualne svojine. Od 2011. godine je direktor Centra za transfer tehmologije Univerziteta u Beogradu.
Na osnovu ostvarenih rezultata, Komisija smatra da su postignuti rezultati naučno-istraživačkog rada kandidata značajni i da dr Nedeljko Milosavljević ispunjava sve uslove za sticanje naučnog zvanja VIŠI NAUČNI SARADNIK u oblasti Tehničko-tehnoloških nauka u skladu sa Pravilnikom o postupku i načinu vrednovanja i kvantitativnom iskazivanju naučno-istraživačkih rezultata istraživača Sl. glasnik RS", broj 159 od 30.12.2020). Komisija predlaže Nastavno-naučnom veću Tehnološko-metalurškog fakulteta Univerziteta u Beogradu da ovaj izveštaj prihvati i prosledi odgovarajućem Matičnom odboru za sticanje naučnih zvanja Ministarstva prosvete, nauke i tehnološkog razvoja Republike Srbije.

U Beogradu, 11.6.2021.

ČLANOVI KOMISIJE:

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