НАСТАВНО-НАУЧНОМ ВЕЋУ
ТЕХНОЛОШКО-МЕТАЛУРШКОГ ФАКУЛТЕТА
УНИВЕРЗИТЕТА У БЕОГРАДУ

На седници Наставно-научног већа Технолошко-металуршког факултета у Београду одржаној 9. марта 2023. именовани смо за чланове Комисије за подношење извештаја о испуњености услова за стицање научно-истраживачког звања НАУЧНИ САВЕТНИК кандидата др Ане Јанковић, дипл. инж. технологије, а у складу са Законом о науци и истраживањима („Службени Гласник РС“ бр. 49/19), Правилником о стицању истраживачких и научних звања ("Службени гласник РС", бр. 14/2023) и сагласно статуту Технолошко-металуршког факултета. На основу прегледа и анализе достављеног материјала и увида у целокупан научно-истраживачки и стручни рад кандидата, Комисија подноси следећи

**ИЗВЕШТАЈ**

## 1.1 БИОГРАФСКИ ПОДАЦИ

Ана Д. Јанковић је рођена 24.12.1972. године, у Јагодини, Република Србија. Завршила је VIII београдску гимназију у Београду. Дипломирала је 2000. године на Технолошко-металуршком факултету Универзитета у Београду на одсеку за Биохемијско инжењерство и биотехнологију. Средња оцена током студија је 8,08.

По дипломирању, од септембра 2000. године, годину дана је била запослена на Технолошко-металуршком факултету као асистент-приправник на Катедри за општу и неорганску хемију.

Године 2001. добија пуну стипендију за докторске студије на „Wayne State University“, Детроит, Мичиген, САД. Докторску дисертацију под називом “Isothermal Titration Calorimetry Studies of Protein-mediated Interactions and Preliminary Structural Studies of Tandem PDZ1-2 Domain of PSD-95 Protein” одбранила је децембра 2009. године на „Department of Chemistry, Wayne State University“, Детроит, МИ, САД, под руководством ментора Dr Mark Spaller-a. Комисија Универзитета у Београду за признавање страних високошколских исправа донела је решење 19.04.2012. којим се диплома признаје  као диплома академских студија (доктор наука-хемијске науке).

Током студија радила је као Graduate Research Assistant од новембра 2001. године до новембра 2007. године, а као Graduate Teaching Assistant од септембра 2001. године до маја 2005. године, на „Department of Chemistry, Wayne State University“, Детроит, МИ, САД. У периоду од фебруара 2008. до јуна 2009. радила је као Research Assistant на „Department of Biochemistry and Molecular Biology, School of Medicine, Wayne State University“, Детроит, МИ, САД. У току студија два пута је награђивана Wayne State University Excellence in Teaching Award, 2004. и 2005. године.

Ана Јанковић била је запослена од 9.01.2012. на Технолошко-металуршком факултету Универзитета у Београду на пројекту REGPOT-FP7 “Reinforcing of Nanotechnology and Functional Materials Centre” (No: 245916) у трајању од 01.01.2010 до 31.12.2012. Пројекат је реализован у оквиру Центра за нанотехнологије и функционалне материјале при Технолошко-металуршком факултету Универзитета у Београду. У оквиру овог пројекта боравила је на NILPRP-The Laser-Surface-Plasma Interactions Laboratory, National Institute for Laser, Plasma, and Radiation Physics у Букурешту, Румунија, у периоду од 17.04.2012. до 31.05.2012, затим од 1.10.2012 до 14.10.2012 и од 29.10.2012 до 15.11.2012. Од 01.03.2013. запослена је у Иновационом центру ТМФ-а и где је до краја 2019. године била ангажована са 12 истраживачких месеци на пројекту Министарства просвете, науке и технолошког развоја под називом „Синтеза, развој технологија добијања и примена наноструктурних мултифункционалних материјала дефинисаних својстава“, са евиденционим бројем III45019. Др

Ана Јанковић изабрана је у звање научни сарадник 12.06.2013., а у звање виши научни сарадник 11.07.2018.

Др Ана Јанковић до сада има објављена четири рада у међународним часописима изузетних вредности, четрнаест радова у врхунским међународним часописима, три рада у истакнутим међународним часописима, три рада у међународним часописима, један рад у националном часопису међународног значаја, један рад у врхунском часопису националног значаја и један рад у међународном часопису ван SCI листе, тридесет четири научна саопштења у зборницима међународних скупова и осамнаест научних саопштења у зборницима националног скупа (списак референци је у прилогу). До сада има један регистрован патент на националном нивоу.

Похађала је међународни Workshop, CCP4 school: From data processing to structure refinement and beyond, на APS, Argonne Laboratory, Chicago, USA у периоду 23.05.2008 – 28.05.2008. У оквиру iPROMEDAI COST акције похађала је и Training school на Université Libre de Bruxelles ULB у Бриселу у периоду 21.03.2018 – 23.03.2018.

Говори течно енглески језик. Члан је Српског хемијског друштва.

## 1.2 НАУЧНО-ИСТРАЖИВАЧКИ РАД

Др Ане Јанковић је учествовала у истраживањима у оквиру једног домаћег и два међународна научно-истраживачка пројекта, а тренутно је ангажована у оквиру једног међународног пројекта.

- FP7-REGPOT-2009-1, NANOTECH FTM - Reinforcing of Nanotechnology and Functional Materials Centre -Grant Agreement 245916, 2009-2012
- "Синтеза, развој технологија добијања и примена наноструктурних мултифункционалних материјала дефинисаних својстава", евиденциони број III 45019, 2011-2019.
- *TD COST Action TD1305: Improved Protection of Medical Devices Against Infection* (iPROMEDAI), European Cooperation in Science and Technology – COST, 2014-2018. (MC substitute)
- "Twinning to excel materials engineering for medical devices –ExcellMater" grant no. 952033, H2020-WIDESPREAD-2018-2020/H2020-WIDESPREAD-2020-5, 2020-2023

Др Ана Јанковић је била ангажована на пројекту Министарства просвете, науке и технолошког развоја који спада у интегрална и интердисциплинарна истраживања, у оквиру кога је активно учествовала у организацији и реализацији истраживачких задатака током реализације пројекта "Синтеза, развој технологија добијања и примена наноструктурних, мултифункционалних материјала дефинисаних својстава", евиденциони број III45019. У оквиру наведеног пројекта руководила је пројектним задатком „Биолошке карактеристике биоматеријала за примене у медицини као имплантати коштаног и меких ткива" која су укључивала испитивање цитотоксичности и антибактеријске активности биоматеријала добијених елекрохемијским поступцима. (*Прилог А*).

Тренутно је ангажована на пројекту"Twinning to excel materials engineering for medical devices –ExcellMater" grant no. 952033, H2020-WIDESPREAD-2018-2020/H2020-WIDESPREAD-2020-5, 2020-2023. где је ангажована као заменица руководиоца радног пакета, односно руководи радним задацима дисеминације резултата пројекта путем друштвених мрежа и Q&A анализом активности (евалуациони формулари) (*Прилог А*).

Научно-истраживачки рад др Ане Јанковић у току боравка у САД на изради докторске дисертације био је фокусиран на протеинску биохемију, специфично на слабе међупротеинске интеракције. Истраживања су се фокусирала на постсинаптичке протеине за које је интеракција протеин-мали молекул или протеин-пептид карактерисана микрокалориметријском методом.

Испитивана је термодинамика интеракција тандем PDZ домена протеина PSD-95 са пептидно-базираним лигандима, као и кристализацију са прелиминарним X-ray кристалографским истраживањима истог дуал протеинског домена. Структурне студије су се ослањале примарно на методу протеинске кристалографије X-зрацима, карактеризацију афинитета јона гвожђа ка фратаксин протеину помоћу титрационе калориметрије, као и структурно одређивање метало-протеина на нивоу атома користећи X-ray апсорпциону спектроскопију и из ове проблематике је објављен један рад у врхунском међународном часопису (M21) и одбрањена докторска дисертација.

Други део истраживања, по повратку на Универзитет у Београду, односи се на добијање и карактерисање електрофоретских биокомпозитних превлака на металима, примарно електрофоретских превлака хидроксиапатита допираних сребром, као и биокомпозитних Ag/хидроксиапатит/лигнин превлака на титану и испитивање утицаја концентрације лигнина на морфологију, структуру и термичко понашање Ag/хидроксиапатит/лигнин превлака. У оквиру овог дела пројекта посебно је значајна научна сарадња са Département des sciences du bois et de la forêt, Université Laval, Québec, Canada. Испитивана су антимикробна својства и цитотоксичност биокомпозитних Аг/хидроксиапатит/лигнин превлака и утврђено је да оптимална концентрација лигнина од 1 мас. % није цитотоксична за испитане периферне ћелије крви. До сада су из ове проблематике објављена три рада у врхунским међународним часописима (3M21) и рад у часопису међународног значаја (1M23), пет радова саопштено је на скуповима међународног значаја штампана у изводу (5M34), као и један рад саопштен на скупу националног значаја штампан у изводу (1M64).

У оквиру међународног REGPOT-FP7 пројекта “Reinforcing of Nanotechnology and Functional Materials Centre” (No: 245916) остварена су три студијска боравка током 2012. године на NILPRP-The Laser-Surface-Plasma Interactions Laboratory, National Institute for Laser, Plasma and Radiation Physics у Букурешту, Румунија. Истраживања на систему биокомпозита Аг/хидроксиапатит/лигнин подразумевају наношење танких филмова на плочице титана техникама Pulsed Laser Deposition (PLD) и Matrix Assisted Pulsed Laser Evaporation (MAPLE). Истраживања су била фокусирана на антимикробно дејство превлака добијених ласер депозицијом на титану. Тестирани су сојеви *Staphylococcus aureus, Pseudomonas aeruginosa* и *Candida famata*. Утврђено је да су биокомпозитне хидроксиапатит/лигнин превлаке допиране сребром показале бактерицидни ефекат, нарочито према *C. famata*. Из ове области истраживања објављен је један рад у врхунском међународном часопису (1M21), један рад у истакнутом међународном часопису (1M22), као и четири саопштења са међународних скупова штампаних у изводу (4M34).

У току 2013. године започета је сарадња са лабораторијом Prof. Kyong Yop Rhee, Department of Mechanical Engineering, Kyung Hee University, Сеул, Јужна Кореја. Фокус ових истраживања је употреба графена, нарочито у сврху добијања и карактерисања електрофоретских превлака хидроксиапатита допираних сребром, као и биокомпозитних Аг/хидроксиапатит/графен превлака на титану. Утицај графена као материјала будућности, веома је значајан на морфологију, структуру и термичко понашање Ag/хидроксиапатит/графен превлака и детаљно је карактерисан следећим методама SEM, FE-SEM, TGA, Raman спектроскопија, FTIR, XPS и XRD. Цитотоксичност биокомпозитних Ag/ хидроксиапатит/графен превлака испитивана је при концентрацији графена од 1 мас. % у коначној маси превлаке за испитане периферне ћелије крви. Испитивана је и антимикробна активност добијених превлака на бактеријским сојевима *Staphylococcus aureus* и *Escherichia coli* методом преживљавања у раствору и агар дифузионим тестом. Резултати су веома охрабрујући јер су превлаке допиране сребром показале одлична бактерицидна својства већ у прва 3h након инкубације, што потврђује способност спречавања настанка биофилма, кључну особину за све антибактеријске имплантате. Зона инхибиције је нарочито изражена око узорака Ag/ хидроксиапатит/графен у случају *S.aureus*. Из ове области истраживања објављена су два рада у врхунском међународном часопису (2M21), један рад у истакнутом међународном часопису

(1М22), као и шест саопштења са међународних скупова штампаних у изводу (6М34). Током 2015. истраживања су проширена и у смеру укључивања полимера и формирање нових композита. Избор је био природни полимер хитозан, те је поступак добијања и потпуна карактеризација на овај начин добијеног хидроксиапатит/хитозан/графен композита објављен и регистрован као национални патент (1М92), а потом и у врхунском међународном часопису (1М21). Најновија истраживања фокусирана су на имплементацију изабраног антибиотика-гентамицина и његово укључивање у композитну превлаку. Оптимизација и поступак добијања су веома нови и на тај начин су добијене вишекомпонентне (композитне) керамичке превлаке на бази хидроксиапатита, хитозана и графена у присуству/одсуству антиобиотика гентамицина на титану. Карактеризацији добијених композитних превлака применом различитих техника и њихово понашање у симулираној телесној течности (*in vitro*) предмет је истраживања из којих је објављен један рад у међународном часопису изузетних вредности (1М21а), три рада у врхунским међународним часописима (3М21), рад у истакнутом међународном часопису (1М22), рад у међународном часопису (1М23), као и рад у националном часопису међународног значаја (1М24).

Истраживања су настављена и у области електрохемијске синтезе хидрогелова на бази нанокомпозита поливинил-алкохола са наночестицама сребра, оптимизација услова електрохемијске синтезе наночестица сребра у хидрогеловима поливинил-алкохола (PVA), са и без графена (Ag/PVA/Gr и Ag/PVA), одређивање морфологије и електрохемијских карактеристика добијених хидрогелова и испитивање кинетике отпуштања сребра, цитотоксичности и антибактеријских својстава нанокомпозитних хидрогелова за потенцијалну примену у медицини као импланти меких ткива. Добијени хидрогелови су нетоксични и са израженим антибактеријским својствима. Специфичност инкорпорисања графена је у сврху побољшања пре свега механичких својстава. Ова истраживања резултирала су објављивањем два рада у међународним часописима изузетних вредности (2М21а) и једног рада у врхунском међународном часопису (1М21), као и једног рад у међународном часопису (1М23). Истраживања су настављена у правцу испитивања нових композита, а овог пута су добијени хидрогелови поливинил-алкохола и хитозана, са и без графена, у којима је извршена електрохемијска синтеза наночестица сребра, те су формирани нанокомпозитни полимерни материјали са активним антибактеријским својствима и објављен један рад у међународном часопису изузетних вредности (1М21а), два рада у врхунским међународним часописима (2М21), као и рад у врхунском часопису националног значаја (1М51).

Током свог истраживачког рада активно је учествовала у реализацији 2 докторске дисертације; кандидата Mohamed Mohamed Abudabbus за израду докторске дисертације под називом “Electrochemical synthesis and characterization of poly(vinyl alcohol) nanocomposites with silver nanoparticles“ и кандидата Радета Суруџића за израду докторске дисертације под називом “Електрохемијска синтеза и карактеризација нанокомпозита поливинил-алкохола, графена и наночестица сребра” као члан Комисије за оцену и одбрану докторске дисертације на Технолошко-металуршком факултету Универзитета у Београду. Учествовала је у изради више дипломских и завршних радова, мастер теза и докторских дисертација, а тренутно је коментор докторске дисертације кандидаткиње Милене Стевановић под насловом “Електрофоретске композитне превлаке хидроксиапатита, хитозана и графена на титану са и без додатка гентамицина“ која је у завршној фази израде.

Укупна досадашња научно-истраживачка активност др Ане Јанковић обухвата укупно 27 радова и 52 научних саопштења, од чега 11 радова и 33 саопштења као и 1 патент регистрован на националном нивоу након избора у звање виши научни сарадник. Према категоријама часописа, кандидаткиња је након избора у звање виши научни сарадник, публиковала 2 рада у међународном часопису изузетних вредности (М21а), 5 радова у врхунском међународном часопису (М21), 1 рад у истакнутом међународном часопису (М22), 1 рад у међународном часопису (М23), 1 рад у националном часопису међународног

значаја (М24) и 1 рад у врхунском часопису националног значаја (М51), као и 34 научна саопштења, од чега 19 саопштења на међународним скуповима штампаних у изводу (М34) и 14 саопштења на националним скуповима штампаних у изводу (М64). Треба истаћи да су презентована истраживања резултирала објављивањем једног патента, признатог на националном нивоу (М92) као и да су освојила 8 међународних награда (М104) – Куп иновација у Руској федерацији, Златну медаљу за иновације у Руској федерацији Златну медаљу на Тесла фесту, Златну медаљу и две Сребрне медаље са ликом Николе Тесле у области нових технологија и 2 IUPAC-ове награде за постерску презентацију *(Прилог А)*.

Укупан импакт фактор (IF) часописа у којима су објављене публикације др Ане Јанковић износи **83,53**. Према бази "Scopus" др Ана Јанковић има (без аутоцитата) **Хиршов индекс (h-индекс) 18,** а према подацима "Google Scholar" има **h-индекс 18** и **i10-индекс 20**.

## 2. СПИСАК НАУЧНИХ РАДОВА КАНДИДАТА

### 2.1. РАДОВИ ОБЈАВЉЕНИ У НАУЧНИМ ЧАСОПИСИМА МЕЂУНАРОДНОГ ЗНАЧАЈА – М20

#### 2.1.1. Рад у међународном часопису изузетних вредности - М21а=10

**<u>После избора у претходно звање:</u>**

2.1.1.1. Milena Stevanović, Marija Djošić, **Ana Janković**, Vesna Kojić, Jovica Stojanović, Svetlana Grujić, Ivana Matić Bujagić, Kyong Yop Rhee, Vesna Mišković-Stanković, The chitosan-based bioactive composite coating on titanium, *J Mater Res Technol* 15, (2021) 4461-4474, (Metallurgy & Metallurgical Engineering, 5/79, IF(2019)= 5.289) ISSN 2238-7854, Publisher: Elsevier https://doi.org/10.1016/j.jmrt.2021.10.072.

**Број хетероцитата/број цитата**:4/4 **Број коаутора**: 9 **М21а** = 10/(1+0,2×(9-7)) = 7,14

2.1.1.2. Katarina Nešović, **Ana Janković,** Vesna Kojić, Maja Vukašinović-Sekulić, Aleksandra Perić-Grujić, Kyong Yop Rhee, Vesna Mišković-Stanković, Silver/poly(vinyl alcohol)/chitosan/graphene hydrogels – Synthesis, biological and physicochemical properties and silver release kinetics,*Compos Part B-Eng* **154** (2018)175-185. (Materials Science, Composites, 1/25, IF (2018) = 6.864) ISSN 1359-8368. Publisher: Elsevier https://doi.org/10.1016/j.compositesb.2018.08.005.

**Број хетероцитата/број цитата**:44/47 **Број коаутора**: 7 **М21а** = 10

**<u>Пре избора у претходно звање:</u>**

2.1.1.3. M.M. Abudabbus, I. Jevremović, **A. Janković**, A. Perić-Grujić, I. Matić, M. Vukašinović-Sekulić, D. Hui, K.Y. Rhee, V. Mišković-Stanković, Biological activity of electrochemically synthesized silver doped polyvinyl alcohol/graphene composite hydrogel discs for biomedical applications, *Compos Part B-Eng* **104** (2016) 26-34. (Materials Science, Composites, 2/25, IF (2016) = 4,727), ISSN 1359-8368. Publisher: Elsevier http://www.sciencedirect.com/science/article/pii/S1359836816302943

**Број хетероцитата/број цитата**:39/43 **Број коаутора**: 9 **М21а** = 10/(1+0,2×(9-7)) = 7,14

2.1.1.4. Rade Surudzić, **Ana Janković**, Natasa Bibić, Maja Vukašinović-Sekulić, Aleksandra Perić-Grujić, Vesna Mišković-Stanković, Soo Jin Park, Kyong Yop Rhee, "Physico-chemical and mechanical properties and antibacterial activity of silver/poly(vinyl alcohol)/graphene nanocomposites obtained by electrochemical method", *Compos Part B-Eng* **85** (2016) 102–112. (Materials Science, Composites, 2/25, IF (2016) = 4,727), ISSN 1359-8368. Publisher: Elsevier http://www.sciencedirect.com.proxy.kobson.nb.rs:2048/science/article/pii/S1359836815005648

**Број хетероцитата/број цитата**:61/66 **Број коаутора**: 8 **М21а** = 10/(1+0,2×(8-7)) = 8,33

#### 2.1.2. Рад у врхунском међународном часопису – М21=8

**<u>После избора у претходно звање:</u>**

2.1.2.1 M. Djošić, **A. Janković**, V. Mišković-Stanković, Electrophoretic Deposition of Biocompatible and Bioactive Hydroxyapatite-Based Coatings on Titanium, *Materials* **14**(18) (2021) 5391. (Metallurgy & Metallurgical Engineering, 12/80, IF(2020)=3.920),ISSN1996-1944,Publisher:MDPI. https://doi.org/10.3390/ma14185391

**Број хетероцитата/број цитата**:5/6 **Број коаутора**: 3 **М21** = 8

2.1.2.2 Milena Stevanović, Marija Djošić, **Ana Janković**, Vesna Kojić, Maja Vukašinović-Sekulić, Jovica Stojanović, Jadranka Odović, Milkica Crevar Sakač, Rhee Kyong Yop, Vesna Mišković-Stanković, Antibacterial graphene-based hydroxyapatite/chitosan coating with gentamicin for potential applications in bone tissue engineering. *J Biomed Mater Res. A* **108** (2020) 2175–2189. (Engineering, Biomedical, 25/90, IF (2020) = 4,396), ISSN 1549-3296. Publisher: Wiley https://doi.org/10.1002/jbm.a.36974

**Број хетероцитата/број цитата**:31/33 **Број коаутора**: 10 **M21** = 8/(1+0,2×(10-7))= 5

2.1.2.3 Katarina Nešović, **Ana Janković**, Tamara Radetić, Maja Vukašinović-Sekulić, Vesna Kojić, Ljiljana Živković, Aleksandra Perić-Grujić, Kyong Yop Rhee, Vesna Mišković-Stanković, Chitosan-based hydrogel wound dressings with electrochemically incorporated silver nanoparticles – In vitro study, *Eur Polym J* **121** (2019) 109257. (Polymer Science, 14/89, IF (2019) = 3.862), ISSN 0014-3057, Publisher: Elsevier https://doi.org/10.1016/j.eurpolymj.2019.109257.

**Број хетероцитата/број цитата**:47/48 **Број коаутора**: 9 **M21** = 8/(1+0,2×(9-7))=5,71

2.1.2.4 Katarina Nešović, **Ana Janković**, Aleksandra Perić-Grujić, Maja Vukašinović-Sekulić, Tamara Radetić, Ljiljana Živković, Soo-Jin Park, Kyong Yop Rhee, Vesna Mišković-Stanković, Kinetic models of swelling and thermal stability of silver/poly(vinyl alcohol)/chitosan/graphene hydrogels, *J Ind Eng Chem* **77** (2019) 83-96, (Engineering, Chemical, 21/143, IF (2019) = 5.278)ISSN 1226-086X. Publisher: Elsevier https://doi.org/10.1016/j.jiec.2019.04.022.

**Број хетероцитата/број цитата**:22/24 **Број коаутора**: 9 **M21** = 8/(1+0,2×(9-7)) = 5,71

2.1.2.5 M. Stevanović, M. Đošić, **A. Janković**, V. Kojić, M. Vukašinović-Sekulić, J. Stojanović, J. Odović, M. Crevar Sakač, K. Y. Rhee, V. Mišković-Stanković, Gentamicin-Loaded Bioactive Hydroxyapatite/Chitosan Composite Coating Electrodeposited on Titanium, *ACS Biomater. Sci. Eng.* **4** (2018) 3994-4007. (Materials Science, Biomaterials, 8/32, IF (2018) = 4,511), ISSN 2373-9878. https://doi.org/10.1021/acsbiomaterials.8b00859

**Број хетероцитата/број цитата**:43/49 **Број коаутора**: 10 **M21** = 8/(1+0,2×(10-7)) = 5

**<u>ПРЕ избора у претходно звање:</u>**

2.1.2.6 M. Đošić, S. Eraković, **A. Janković**, M. Vukašinović-Sekulić, I. Z. Matić, J. Stojanović, K. Y. Rhee, V. Mišković-Stanković, S. J. Park, „In vitro investigation of electrophoretically deposited bioactive hydroxyapatite/chitosan coatings reinforced by graphene“, *J Ind Eng Chem* **47** (2017) 336-347. (Chemistry, Multidisciplinary, 32/166, IF (2016) = 4.421), ISSN 1226-086X. Publisher: Elsevier http://dx.doi.org/10.1016/j.jiec.2016.12.004

**Број хетероцитата/број цитата**:33/38 **Број коаутора**: 9 **M21** = 8/(1+0,2×(9-7)) = 5,71

2.1.2.7 Rade Surudzić, **Ana Janković**, Miodrag Mitrić, Ivana Matić, Zorica D. Juranić, Ljiljana Živković, Vesna Mišković-Stanković, Kyong Yop Rhee, Soo Jin Park, David Hui, "The effect of graphene loading on mechanical, thermal, and biological properties of poly(vinyl alcohol)/graphene nanocomposites", *J Ind Eng Chem* **34** (2016) 250-257. (Chemistry, Multidisciplinary, 32/166, IF (2016) = 4.421), ISSN 1226-086X. Publisher: Elsevier http://dx.doi.org/10.1016/j.jiec.2015.11.016.

**Број хетероцитата/број цитата**:48/ 51 **Број коаутора**: 10 **M21** = 8/(1+0,2×(10-7)) = 5

2.1.2.8 **Ana Janković**, Sanja Eraković, Maja Vukašinović-Sekulić, Miodrag Mitrić, Vesna Mišković-Stanković, Kyong Yop Rhee, " Graphene-based antibacterial composite coatings electrodeposited on titanium for biomedical applications", *Prog Org Coat* **83** (2015) 1–10. (Materials Science, Coatings & Films, 3/18, IF (2015) = 2,632), ISSN 0300-9440. Publisher: Elsevier, http://www.sciencedirect.com/science/article/pii/S0300944015000284

**Број хетероцитата/број цитата**:93/99 **Број коаутора**: 6 **M21** = 8

2.1.2.9 **Ana Janković**, Sanja Eraković, Miodrag Mitrić, Ivana Z. Matić, Zorica D. Juranić, Gary C.P. Tsui, Chak-yin Tang, Vesna Mišković-Stanković, Kyong Yop Rhee, Soo Jin Park, "Bioactive hydroxyapatite /graphene composite coating and its corrosion stability in simulated body fluid", *J Alloy Compd* **624** (2015) 148-157. (Materials Science, Multidisciplinary, 58/271, IF (2015) = 3,014), ISSN 0925-8388. Publisher: Elsevier http://www.sciencedirect.com/science/article/pii/S0925838814027261

**Број хетероцитата/број цитата**:157/165 **Број коаутора**: 10 **M21** = 8/(1+0,2×(10-7)) = 5

2.1.2.10 S. Eraković, **A. Janković**, C. Ristoscu, L. Duta, N. Serban, A. Visan, I.N. Mihailescu, G.E. Stan, M. Socol, O. Iordache, I. Dumitrescu, C.R. Luculescu, Dj. Janaćković, V. Mišković-Stanković, "Antifungal activity of Ag:hydroxyapatite thin films synthesized by pulsed laser deposition on Ti and Ti modified by $TiO_2$ nanotubes substrates", *Appl Surf Sci* **293** (2014) 37–45. (Materials Science, Coatings & Films, 2/17, IF (2014) = 2,711), ISSN 0169-4332. Publisher: Elsevier, http://www.sciencedirect.com/science/article/pii/S016943321302299X

**Број хетероцитата/број цитата**:54/58 **Број коаутора**: 14 **M21** = 8/(1+0,2×(14-7)) =3,33

2.1.2.11 Sanja Erakovic, **Ana Jankovic**, Gary C. P. Tsui, Chak-Yin Tang, Vesna Miskovic-Stankovic and Tatjana Stevanovic, "Novel Bioactive Antimicrobial Lignin Containing Coatings on Titanium Obtained by Electrophoretic Deposition", *Int J Mol Sci* **15**(7) (2014) 12294-12322. (Chemistry, Multidisciplinary, 46/157, IF (2014) = 2,862), ISSN 1422-0067. Publisher: MDPI http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4139845/

**Број хетероцитата/број цитата**:50/52 **Број коаутора**: 6 **M21** = 8

2.1.2.12 Sanja Eraković, **Ana Janković**, Ivana Z. Matić, Zorica D. Juranić, Maja Vukašinović-Sekulić, Tatjana Stevanović and Vesna Mišković-Stanković, "Investigation of Silver Impact on Hydroxyapatite/Lignin Coatings Electrodeposited on Titanium", *Mater Chem Phys* **142** (2013) 521-530. (Materials Science, Multidisciplinary, 48/232, IF (2011) = 2,385), ISSN 0254-0584. Publisher: Elsevier http://www.sciencedirect.com/science/article/pii/S0254058413005816

**Број хетероцитата/број цитата**:31/38 **Број коаутора**: 7 **M21** = 8

2.1.2.13 Sanja Eraković, **Ana Janković**, Djordje Veljović, Eriks Palcevskis, Miodrag Mitrić, Tatjana Stevanović, Djordje Janaćković, Vesna Mišković-Stanković, "Corrosion Stability and Bioactivity in Simulated Body Fluid of Silver/Hydroxyapatite and Silver/Hydroxyapatite/Lignin Coatings on Titanium Obtained by Electrophoretic Deposition", *J Phys Chem B* **117** (2013) 1633-1643. (Chemistry, Physical, 32/134, IF (2011) = 3,696), ISSN 1520-6106. Publisher: ACS Publications, http://pubs.acs.org/doi/abs/10.1021/jp305252a

**Број хетероцитата/број цитата**:80/89 **Број коаутора**: 8 **M21** = 8/(1+0,2×(8-7)) = 6,67

2.1.2.14 Cook, J.D.; Bencze, K.Z; **Jankovic, A.D.**; Crater, A.K.; Busch, C.N.; Bradley, P.B.; Stemmler,A.J.; Spaller, M.R.; Stemmler, T.L. "Monomeric Yeast Frataxin is an Iron Binding Protein*", Biochemistry-US* **45** (2006) 7767-7777. (Biochemistry & Molecular Biology, 72/261, IF (2005) = 3.848), ISSN 0006-2960. Publisher: ACS Publications http://pubs.acs.org/doi/abs/10.1021/bi060424r

**Број хетероцитата/број цитата**:112/112 **Број коаутора**: 9 **M21** = 8/(1+0,2×(9-7)) = 5,71

**2.1.3. Рад у истакнутом међународном часопису – М22=5**

**<u>После избора у претходно звање:</u>**

2.1.3.1 Milena Stevanović, Marija Djošić, **Ana Janković**, Katarina Nešović, Vesna Kojić, Jovica Stojanović,Svetlana Grujić, Ivana Matić Bujagić, Kyong Yop Rhee, Vesna Mišković-Stanković, Assessing the Bioactivity of Gentamicin-Preloaded Hydroxyapatite/Chitosan Composite Coating on Titanium Substrate, *ACS Omega* **5**, 25 (2020)15433–15445. (Chemistry, Multidisciplinary, 70/180, IF (2020) = 3.613), ISSN 2470-1343. Publisher: ACS. https://doi.org/10.1021/acsomega.0c01583

**Број хетероцитата/број цитата**:19/21 **Број коаутора**: 10 **М22** = 5/(1+0,2×(10-7))= 3,12

**<u>Пре избора у претходно звање:</u>**

2.1.3.2 **A. Janković**, S. Eraković, C. Ristoscu, N. Mihailescu (Serban), L. Duta, A. Visan, G.E. Stan, A.C. Popa, M.A. Husanu, C.R. Luculescu, V.V. Srdić, Dj. Janaćković, V. Mišković-Stanković, C. Bleotu, M.C. Chifiriuc, I.N. Mihailescu, , "Structural and biological evaluation of lignin addition to simple and silver doped hydroxyapatite thin films synthesized by matrix-assisted pulsed laser evaporation", *J Mater Sci-Mater M* **26**:17 (2015) 1-14. (Engineering, Biomedical, 21/72, IF (2014) = 2,587), ISSN 0957-4530. Publisher: Springer http://link.springer.com/article/10.1007/s10856-014-5333-y

**Број хетероцитата/број цитата**:42/42 **Број коаутора**: 16 **М22** = 5/(1+0,2×(16-7)) = 1,79

2.1.3.3 Vesna Mišković-Stanković, Sanja Eraković, **Ana Janković**, Maja Vukašinović-Sekulić, Miodrag Mitrić, Young Chan Jung, Soo Jin Park and Kyong Yop Rhee "Electrochemical synthesis of nanosized hydroxyapatite/ graphene composite powder" *Carbon Lett* **16** (2015) 233-240. (Materials Science, Multidisciplinary, 124/260, IF (2014) = 1,625), ISSN 1976-4251. Publisher: Korean Carbon Society http://carbonlett.org/PublishedPaper/topic_abstract.asp?idx=515

**Број хетероцитата/број цитата**:13/14 **Број коаутора**: 8 **М22** = 5/(1+0,2×(8-7)) = 4,17

**2.1.4. Рад у међународном часопису – М23=3**

**<u>После избора у претходно звање:</u>**

2.1.4.1 M. Stevanović, M. Djošić, **A. Janković**, K. Y. Rhee, V. Mišković-Stanković, Electrophoretically deposited hydroxyapatite-based composite coatings loaded with silver and gentamicin as antibacterial agents, *J. Serb. Chem. Soc.* **84** (11) (2019) 1287-1304, (Chemistry, Multidisciplinary, 135/177, IF (2019) = 1,023), ISSN: 0352-5139. https://doi.org/10.2298/JSC190821092S

**Број хетероцитата/број цитата**:7/8 **Број коаутора**: 5 **М23** = 3

**<u>Пре избора у претходно звање:</u>**

2.1.4.2 Rade Surudzić, **Ana Janković**, Maja Vukašinović-Sekulić, Aleksandra Perić-Grujić, Kyong Yop Rhee, Vesna Mišković-Stanković, "Optimization of the electrochemical synthesis of silver nanoparticles in poly(vinyl alcohol) colloid solutions", *Bulg Chem Commun* **49** (2017) 186–193. (Chemistry, Multidisciplinary, 163/166, IF (2016) = 0,238), ISSN 0324-1130. http://www.bcc.bas.bg/BCC_Volumes/Volume_49_Special_C_2017/BCC21_49-C-2017_M-Stankovic_p186.pdf

**Број хетероцитата/број цитата**: / **Број коаутора**: 6 **М23** = 3

2.1.4.3 **Ana Janković**, Sanja Eraković, Antonija Dindune, Djordje Veljović, Tatjana Stevanović, Djordje Janaćković, Vesna Mišković-Stanković, " The electrochemical impedance spectroscopy of silver doped hydroxyapatite coating in SBF solution used as corrosive agent",

*J Serb Chem Soc* **77** (2012) 1609-1623. (Chemistry, Multidisciplinary, 102/152, IF (2011) = 0,879), ISSN 0352-5139. http://www.shd.org.rs/JSCS/

**Број хетероцитата/број цитата**:5/9 **Број коаутора**: 7 **M23** = 3

**2.1.5. Рад у националном часопису међународног значаја – M24=3**

**<u>После избора у претходно звање:</u>**

2.1.6.1 M. Đošić, **A. Janković**, K. Y. Rhee, V. Mišković-Stanković, Graphene Reinforced Hydroxyapatite Biocomposite Coatings Obtained by Electrophoretic Deposition on Titanium, *Zaštita materijala* **59** (2018) 293-306. ISSN 0351-9465 https://doi.org/10.5937/ZasMat1802293D

**Број хетероцитата/број цитата**: / **Број коаутора**: 4 **M24** = 3

**2.1.6. Рад у међународном часопису ван SCI листе**

**<u>Пре избора у претходно звање:</u>**

2.1.6.1 Vesna Mišković-Stanković, **Ana Janković**, Sanja Eraković, Kyong Yop Rhee "Graphene Based Biomedical Composite Coatings Produced by Electrophoretic Deposition on Titanium" *Eurasian Chemico-Technological Journal* **17** (2015) 3-15. ISSN 1562-3920. Publishier: Institute of Combustion Problems http://ect-journal.kz/index.php/ect01/article/view/189

**Број хетероцитата/број цитата**:7/7 **Број коаутора**: 4

**2.2. ЗБОРНИЦИ МЕЂУНАРОДНИХ НАУЧНИХ СКУПОВА – M30**

**2.2.1. Саопштење са међународног скупа штампано у изводу – M34=0,5 (19x0.5=9.5)**

**<u>После избора у претходно звање:</u>**

2.2.1.1 Milena Stevanović, **Ana Janković**, Marija Djošić, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, Bioactive hydroxyapatite/chitosan/poly(vinyl alcohol)/gentamicin composite coating electrodeposited on titanium, Twentieth Young Researchers' Conference – Materials Science and Engineering, Serbian Academy of Sciences and Arts, Belgrade, Serbia, November 30- December 2, 2022, Programme and the Book of Abstracts, 3-1, p. 15.

2.2.1.2 **Ana Janković**, Marija S. Đošić, Vesna Mišković-Stanković, Bioactive antibiotic-eluting hydroxyapatite-based coatings obtained by electrophoretic deposition on titanium, BIOMATERIALS AND NOVEL TECHNOLOGIES FOR HEALTHCARE 3rd biennial International Conference BIOMAH, Rome, Italy, October 18-21, 2022, 3rd BioMaH Proceedings ISBN 978 88 8080 500 7 (electronic edition), p. 216.

2.2.1.3 Milena Stevanović, Marija Djošić, **Ana Janković**, Katarina Nešović, Vesna Mišković-Stanković, GRAPHENE-LOADED BIOACTIVE HYDROXYAPATITE COATINGS ON TITANIUM SUBSTRATE - FUNDAMENTAL IN VITRO INVESTIGATIONS, 6th World TERMIS Conference 2021, Maastricht, The Netherlands, 15-19 November, 2021 (Online), Abstract Book online, Abstract #482.

2.2.1.4 Katarina Nešović, **Ana Janković**, Rade Surudžić, Maja Vukašinović-Sekulić, Vesna Kojić, Tamara Radetić, Vesna Mišković-Stanković, SILVER NANOPARTICLES-LOADED POLY(VINYL ALCOHOL)/CHITOSAN/GRAPHENE HYDROGELS OBTAINED BY ELECTROCHEMICAL SYNTHESIS, 6th World TERMIS Conference 2021, Maastricht, The Netherlands, 15-19 November, 2021 (Online), Abstract Book online, Abstract #480.

2.2.1.5 Katarina Nešović, **Ana Janković**, Vesna Kojić, Ljiljana Živković, Tamara Radetić, Maja Vukašinović-Sekulić, Aleksandra Perić-Grujić, Vesna Mišković-Stanković, Electrochemical In Situ Method to Obtain Silver Nanoparticles in Hydrogels for Wound Dressing Applications, 71st

Annual Meeting of the International Society of Electrochemistry – Belgrade Online, August 31st - September 4th, 2020, Online Version, Poster No. s17-030, ID ise201585

2.2.1.6 Milena Stevanović, Marija Djošić, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, Electrophoretically Deposited Bioceramic Composite Coatings on Ti Substrate Intended for Medical Use, 71st Annual Meeting of the International Society of Electrochemistry- Belgrade Online, August 31st - September 4th, 2020, Online Version, Poster No. s17-034, ID ise201588.

2.2.1.7 Katarina Nešović, **Ana Janković**, Tamara Radetić, Vesna Kojić, Aleksandra Perić-Grujić, Vesna Mišković-Stanković, Electrochemically synthesized silver nanoparticles for antibacterial applications, 9th International Conference of the Chemical Societies of the South-East European Countries (ICOSECS-9), Targoviste, Romania, May 8-11. 2019, Book of Abstracts S4_P_08, p. 229.

2.2.1.8 Vesna Mišković-Stanković, Katarina Nešović, **Ana Janković,** Tamara Radetić, Aleksandra Perić-Grujić, Maja Vukašinović-Sekulić, Vesna Kojić, Kyong Yop Rhee, Poly(vinyl alcohol)/chitosan hydrogels with electrochemically synthesized silver nanoparticles for wound dressing applications, 7th Regional Symposium on Electrochemistry for South-East Europe (RSE-SEE-7), Split, Croatia, May 27-30. 2019, Book of Abstracts, MAT-P-6, p. 121.

2.2.1.9 Katarina Nešović, **Ana Janković**, Maja Vukašinović-Sekulić, Ljiljana Živković, Tamara Radetić, Vesna Mišković-Stanković, Electrochemical synthesis of silver nanoparticles in poly(vinyl alcohol)/chitosan/graphene hydrogels and their applications as wound dressing materials, Eighteenth Young Researchers' Conference – Materials Sciences and Engineering, Serbian Academy of Sciences and Arts, Belgrade, Serbia, December 4-6. 2019, Programme and the Book of Abstracts, 3-8, p. 23.

2.2.1.10 Milena Stevanović, Marija Đošić, **Ana Janković**, Vesna Kojić, Maja Vukašinović-Sekulić, Vesna Mišković-Stanković, Gentamicin-loaded bioceramic composite coating aimed for biomedical use, 9th International Conference of the Chemical Societies of the South-East European Countries, (ICOSECS 9), Targoviste, Romania, 2019., Book of Abstracts, S4_P_09 p. 230.

2.2.1.11 Milena Stevanović, **Ana Janković**, Marija Đošić, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, Surface modification of Ti implants by electrophoretic deposition of hydroxyapatite/chitosan/graphene/gentamicin coating, Eighteenth Young Researchers' Conference – Materials Sciences and Engineering, Serbian Academy of Sciences and Arts, Belgrade, Serbia, December 4-6. 2019, Programme and the Book of Abstracts, 3-3, p. 18.

2.2.1.12 Milena Stevanović, Marija Đošić, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Kojić and Vesna Mišković-Stanković, Bioactive Hydroxyapatite/Chitosan/Gentamicin Composite Coating Electrodeposited on Titanium, First International Conference On Electron Microscopy Of Nanostructures – ELMINA2018, Belgrade, Serbia, August 27-29, 2018, Book of Abstracts, PO2.18, p. 225.

2.2.1.13 Katarina Nešović, **Ana Janković**, Maja Vukašinović-Sekulić, Aleksandra Perić-Grujić, Vesna Mišković-Stanković**,** Nanocomposite Hydrogels Based on Poly(vinyl alcohol) and Chitosan with Silver Nanoparticles and Graphene Aimed for Wound Dressing Applications, First International Conference On Electron Microscopy Of Nanostructures – ELMINA2018, Belgrade, Serbia, August 27-29, 2018, Book of Abstracts, PO2.23, p. 240.

2.2.1.14 Katarina Nešović, **Ana Janković**, Maja Vukašinović-Sekulić, Aleksandra Perić-Grujić,Vesna Kojić, Vesna Mišković-Stanković, Silver/poly(vinyl alcohol)/chitosan and silver/poly(vinyl alcohol)/chitosan/graphene hydrogels – electrochemical synthesis,silver release and antibacterial properties, Seventeenth Young Researchers'Conference – Materials Sciences and Engineering, Serbian Academy of Sciences and Arts, Belgrade, Serbia, December 5-7, 2018, Programme and the Book of Abstracts, 2-6, p. 11.

2.2.1.15 Milena Stevanović, **Ana Janković**, Marija Đošić, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, Antibiotic loaded bioactive orthopedic implant coating, Seventeenth Young Researchers' Conference – Materials Sciences and Engineering, Serbian Academy of

Sciences and Arts, Belgrade, Serbia, December 5-7, 2018, Programme and the Book of Abstracts, 1-2, p. 2.

2.2.1.16 Stevanović, M. Đošić, **A. Janković**, M. Vukašinović-Sekulić, V. Mišković-Stanković, Electrochemically obtained bioactive nanocomposite coating based on hydroxyapatite and chitosan loaded with gentamicin, 16th Young Researchers' Conference - Materials Research Society of Serbia and Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Belgrade, Serbia, December 6-8, 2017, Programme and the Book of Abstracts, 3-4, p. 14.

2.2.1.17 Katarina Nešović, **Ana Janković**, Maja Vukašinović-Sekulić, Aleksandra Perić-Grujić, Vesna Mišković-Stanković, The influence of chitosan content on antibacterial properties and silver release for silver/poly(vinyl alcohol)/chitosan/graphene hydrogels, Serbian Academy of Sciences and Arts, Belgrade, Serbia, 6-8. December 2017, Programme and the Book of Abstracts, 2-1, p. 7

2.2.1.18 I. Ilić, **A. Janković**, M. Đošić, M. Vukašinović-Sekulić, V. Mišković-Stanković, Electrophoretic deposition of biocomposite ceramic coatings of hydroxyapatyte and chitosan with silver and gentamicin on titanium for medical applications, 16th Young Researchers' Conference - Materials Research Society of Serbia and Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Belgrade, Serbia, 6-8. December 2017, Programme and the Book of Abstracts, 1-4, p. 4.

2.2.1.19 M. Stevanović, M. Đošić, **A. Janković**, V. Mišković-Stanković, Electrophoretically deposited bioactive hydroxyapatite/chitosan coatings loaded with gentamicin, 12th Conference for Young Scientists in Ceramics, CYSC-2017, Faculty of Technology Novi Sad, Serbia, 18-21. October 2017, Book of Abstracts, OC 76 p. 93.

**<u>Пре избора у претходно звање:</u>**

2.2.1.20 Sanja Eraković, **Ana Janković**, Gary C.P. Tsui, Chack-Yin Tang, Maja Vukašinović-Sekulić, Ivana Z. Matić, Vesna Mišković-Stanković, Tatjana Stevanovic, „Use of electrophoretic deposition in the processing of novel bioactive hydroxyapatite/lignin coatings“, 6th ISE Satellite Student Regional Symposium on Electrochemistry (ISE-SRSSE), 8. Juli 2016, Zagreb, Croatia, Book of abstract, p. 32-33.

2.2.1.21 Sanja Erakovic, **Ana Jankovic**, Maja Vukasinovic-Sekulic, Kyong Yop Rhee and Vesna Miskovic-Stankovic, „Biomedical Composite Silver/Hydroxyapatite/Graphene Coatings“, 5th Regional Symposium on Electrochemistry South-East Europe (RSE-SEE5), 7-11 June 2015, Pravets, Bulgaria, Book of Abstracts, BEH-P-01, p. 35.

2.2.1.22 Vesna Miskovic-Stankovic, **Ana Jankovic**, Sanja Erakovic and Kyong Yop Rhee, „Electrochemical Hybrid Hydroxyapatite/Graphene Coatings on Titanium“, 2015 International Conference on Hybrid Materials (ICHM 2015), 15-17 May 2015, Jeonju, South Korea, Abstracts, ICHM201515-04, p. 34.

2.2.1.23 Sanja Eraković, **Ana Janković**, Miodrag Mitrić, Ivana Matić, Zorica Juranić, Gary C.P. Tsui, Chak-yin Tang, Vesna Mišković-Stanković, Kyong Yop Rhee, Soo Jin Park, “Electrophoretic Hybrid Hydroxyapatite/Graphene Coatings on Titanium”, Thirteenth Young Researchers’ Conference: Materials Science and Engineering, 10-12 December 2014, Belgrade, Serbia, Book of Abstracts, II/5, p.6.

2.2.1.24 Vesna Mišković-Stanković, **Ana Janković**, Sanja Eraković, Kyong Yop Rhee,“Novel biocomposite hydroxyapatite/graphene coatings on titanium substrate assembled by electrophoretic deposition”, XXXIII-rd ROMANIAN CHEMISTRY CONFERENCE, L’atélier „Nouveaux matėriaux pour la reconnaissance electrochimique des mineraux et des espėces biologiques” « NOMARES», 1-3 October 2014, Caciulata, Valcea, Romania, Book of Abstracts,(CD-ROM),O-3, p. 21.

2.2.1.25 V. Mišković-Stanković, **A. Janković**, S. Eraković, K. Y. Rhee, “ Graphene based biomedical composite coatings produced by electrophoretic deposition on titanium”, VIII International

Symposium Physics and Chemistry of Carbon Materials/Nanoengineering, Almaty, The Republic of Kazakhstan, 17-19 September 2014, Book of Abstracts, Proceedings, p. 21-23.

2.2.1.26 Vesna Mišković-Stanković, **A. Janković**, Vivek Dhand, Kyong Yop Rhee, " Electrochemical Biocomposite Graphene/Hydroxyapatite Coatings on Titanium Aimed for Medical Applications", Carbon 2014; World Conference on Carbon, Carbon Materials for Ubiquitous and Sustainable Life, June 29 - July 4 2014, Jeju, Korea, Carbon 2014, Oral Abstracts, ILT3-06.

2.2.1.27 Sanja Eraković, **Ana Janković**, Carmen Ristoscu, Liviu Duta, Natalia Serban, Anita Visan, George E. Stan, Catalin Luculescu, Djordje Janacković, Ion N. Mihailescu, Vesna Mišković-Stanković, "Laser assembling of thin bioceramic and biocomposite films on titanium utilizing Pulsed laser deposition (PLC) and Matrix-assisted pulsed laser evaporation (MAPLE) techniques", Twelfth Young Researchers' Conference-Materials Science and Engineering, 11-13 December 2013, Belgrade, Serbia, Book of Abstracts, XII/1, p. 41.

2.2.1.28 S. Eraković, **A. Janković**, C. Ristoscu, L. Duta, N. Serban, A. Visan, I.N. Mihailescu, G.E. Stan, M. Socol, O. Iordache, I. Dimitrescu, C.R. Luculescu, Dj. Janaćković, V. Mišković-Stanković, "Silver/hydroxyapatite coating on pure and anodized titanium obtained by pulsed laser deposition", YUCOMAT 2013, 2-6 September 2013, Herceg Novi, Montenegro, Book of abstracts, P.S.E.12, p. 140.

2.2.1.29 **A. Jankovic**, N. Serban, L. Duta, S. Erakovic, C. Ristoscu, G.E. Stan, A. Visan, C. Luculescu, M.C. Chifiriuc, V. Miskovic-Stankovic, I.N. Mihailescu, "Pure and doped hydroxyapatite thin films synthesized by advanced laser techniques for metal implant coatings", E-MRS 2013 Spring Meeting, 27-31 May 2013, Strasbourg, France, Book of abstracts, p. V10.

2.2.1.30 S. Erakovic, **A. Jankovic**, C. Ristoscu, L. Duta, N. Serban, A. Visan, G. Stan, M. Socol, C.R. Luculescu, I.N. Mihailescu, V. Miskovic-Stankovic, "PLD deposited thin films on titanium modified by $TiO_2$ nanotubes", Fourth Regional Symposium on Electrochemistry South East Europe (RSE-SEE), 26-30 May 2013, Ljubljana, Slovenia, Book of abstracts, p. 129.

2.2.1.31 Sanja Eraković**,** Rade Surudžić, Djordje Veljović, **Ana Janković**, Tatjana Stevanović, Vesna Mišković-Stanković, "Electrochemical studies of composite hydroxyapatite/lignin coatings doped with silver", Satellite Student Regional Symposium on Electrochemistry-3rd Regional Symposium on Electrochemistry of South-East Europe (SSRSE-RSE-SEE 3), 13-17 May 2012, Bucharest, Romania, Book of Abstracts, SS – O – 05, p. 129.

2.2.1.32 **A. Janković**, S. Eraković, R. Surudžić , Dj. Veljović, M. Vukašinović-Sekulić, I. Matić, Z. Juranić, Dj. Janaćković, T. Stevanović, V. Mišković-Stanković, "*The Investigation of Silver Impact on Hydroxyapatite Coatings*", First International Conference on Processing, characterisation and application of nanostructured materials and nanotechnology (NanoBelgrade), 26-28 September 2012, Belgrade, Serbia, Book of Abstracts, OP18, p. 68.

2.2.1.33 Sanja Eraković, **Ana Janković**, Ivana Z. Matić, Zorica D. Juranić, Maja Vukašinović-Sekulić, Tatjana Stevanović, Vesna Mišković-Stanković, "Investigation of silver bioactivity of electrodeposited silver/hydroxyapatite/lignin coatings in simulated body fluid", First International Conference of Young Chemists of Serbia, 19-20 October 2012, Belgrade, Serbia, Book of Abstracts, (CD Rom), BH-PP2, p. 4.

2.2.1.34 Sanja Eraković, **Ana Janković**, Ivana Matić, Zorica Juranić, Maja Vukašinović-Sekulić, Tatjana Stevanović, Vesna Mišković-Stanković, "The Bioactivity Investigation of Electrodeposited Silver/Hydroxyapatite/Lignin Coatings in Simulated Body Fluid", The Eleventh Young Researchers' Conference: Materials Science and Engineering, 3-5 December 2012, Belgrade, Serbia, Book of Abstracts, TM 3, p. 45.

## 2.3 ЧАСОПИСИ НАЦИОНАЛНОГ ЗНАЧАЈА М50

### 2.3.1 Радови у врхунским часописима националног значаја– М51=2 (1x1,67*=1,67)

**<u>После избора у претходно звање:</u>**

2.3.1.1 Katarina Nešović, **Ana Janković**, Tamara Radetić, Aleksandra Perić-Grujić, Maja Vukašinović-Sekulić, Vesna Kojić, Kyong Yop Rhee, Vesna Mišković-Stanković, Poly(vinyl alcohol)/chitosan hydrogels with electrochemically synthesized silver nanoparticles for wound dressing applications, *J. Electrochem. Sci. Eng.* RSE-SEE7 Special Issue **10**(2) (2020) 185-198; http://dx.doi.org/10.5599/jese.732

**Број хетероцитата/број цитата**:6/6 **Број коаутора**: 8 **М51** = 2/(1+0,2×(8-7)) = 1,67

## 2.4. ЗБОРНИЦИ СКУПОВА НАЦИОНАЛНОГ ЗНАЧАЈА – М60

### 2.4.1. Саопштење са скупа националног значаја штампано у изводу – М64=0,2 (14x0.2=2.8)

**<u>После избора у претходно звање:</u>**

2.4.1.1 Marija S. Đošić, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Mišković-Stanković, Composite bioactive coatings loaded with gentamicin electrophoretically deposited on titanium, 58th Meeting of the Serbian Chemical Society, Belgrade, Serbia, June 9-10, 2022, Book of Abstracts, EH-2, p. 71.

2.4.1.2 **Ana Janković**, Marija S. Đošić, Nevena Jaćimović, Vesna Kojić, Vesna Mišković-Stanković, Electrophoretically deposited composite coatings as drug carriers, 58th Meeting of the Serbian Chemical Society, Belgrade, Serbia, June 9-10, 2022, Book of Abstracts, EH-3, p. 72.

2.4.1.3 **Ana Janković**, Milena Stevanović, Marija Đošić, Maja Vukašinović-Sekulić, Vesna Kojić, Svetlana Grujić, Ivana Matić-Bujagić, Vesna Mišković-Stanković, Bioactive Gentamicin-Eluting Composite Coatings on Titanium, 57th Meeting of the Serbian Chemical Society, Kragujevac, Serbia, June 18-19, 2021 (Online), Book of Abstracts, EH-P-9, p. 46.

2.4.1.4 Katarina Nešović, **Ana Janković**, Tamara Radetić, Vesna Kojić, Vesna Mišković-Stanković, Novi materijali za obloge za rane sa elektrohemijski sintetisanim nanočesticama srebra, 56. Savetovanje Srpskog hemijskog društva, Rektorat Univerziteta u Nišu, Niš, Srbija, 7-8. Jun 2019., Knjiga apstrakata, EHO3, p. 27.

2.4.1.5 **Ana Janković**, Katarina Nešović, Milena Stevanović, Marija Đošić, Maja Vukašinović-Sekulić, Vesna Mišković-Stanković, Elektrohemijski sintetizovani kompoziti sa inkorporiranim antibakterijskim agensima, 56. Savetovanje Srpskog hemijskog društva, Rektorat Univerziteta u Nišu, Niš, Srbija, 7-8. Jun 2019., Knjiga apstrakata, EHP1, p. 28.

2.4.1.6 Katarina Nešović, **Ana Janković**, Vesna Kojić, Vesna Mišković-Stanković, In vitro investigation of hydrogel wound dressing materials with electrochemically incorporated silver nanoparticles, 7th Conference of the Young Chemists of Serbia, Belgrade, Serbia, November 2nd, 2019, Book of Abstracts, MSPP06, p. 139.

2.4.1.7 Milena Stevanović, Marija Đošić, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, Elektroforetsko taloženje antibakterijske kompozitne prevlake hidroksiapatita sa hitozanom, grafenom i gentamicinom, 56. Savetovanje Srpskog hemijskog društva, Niš, 2019, Knjiga apstrakata, EH 02, p.26.

2.4.1.8 Milena Stevanović, Marija Đošić, **Ana Janković**, Vesna Mišković-Stanković, Graphene-reinforced composite hydroxyapatite/chitosan and hydroxyapatite/chitosan/gentamicin coatings, 7th Conference of the Young Chemists of Serbia, Belgrade, 2019, Book of Abstracts, MS PP 07, p. 140.

2.4.1.9 **Janković Ana,** Nešović Katarina, Stevanović Milena, Đošić Marija, Kojić Vesna, Vukašinović-Sekulić Maja, Mišković-Stanković Vesna, Elektrohemijski sintetizovani bioaktivni kompoziti za medicinske primene (Electrochemically synthesized bioactive composites aimed for medical applications), XII Kongres mikrobiologa Srbije sa međunarodnim učešćem, MIKROMED 2018 REGIO, Beograd, 10-12. maj 2018., Zbornik apstrakata, p. 162-163.

2.4.1.10 Marija Đošić, Milena Stevanović, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, Three-component bioactive coatings with gentamicin electrophoretically deposited on titanium, 55th Meeting of the Serbian Chemical Society, Novi Sad, Serbia, June 8-9, 2018, Book of Abstracts, EH P 04, p. 22.

2.4.1.11 **Ana Janković**, Katarina Nešović, Maja Vukašinović-Sekulić, Vesna Kojić, Aleksandra Perić-Grujić, Vesna Mišković-Stanković, The influence of chitosan content on swelling, release and biological properties of silver/poly(vinyl-alcohol)/chitosan/graphene hydrogels, 55$^{th}$ Meeting of the Serbian Chemical Society, Novi Sad, Serbia, June 8-9, 2018, Book of Abstracts, EH P 05, p. 23.

2.4.1.12 Milena Stevanović, Marija Đošić, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, Electrodeposited bioceramic composite coating loaded with gentamicin for biomedical use as hard tissue implants, 55th Meeting of the Serbian Chemical Society, Novi Sad, Serbia, June 8-9, 2018, Book of Abstracts, EH P 03, p. 21.

2.4.1.13 Katarina Nešović, **Ana Janković**, Aleksandra Perić-Grujić, Vesna Mišković-Stanković, Antibacterial silver/poly(vinyl alcohol)/chitosan hydrogels for wound dressing applications, 6th Conference of the Young Chemists of Serbia, Belgrade, Serbia, October 27th, 2018, Book of Abstracts, NM07 PE4, p. 98.

2.4.1.14 Milena Stevanović, Marija Đošić, **Ana Janković,** Vesna Mišković-Stanković, Antibacterial activity and biocompatibility of novel composite hydroxyapatite/chitosan/gentamicin coating, 6th Conference of the Young Chemists of Serbia, Belgrade, Serbia, October 27th, 2018, Book of Abstracts, NM11 PE8, p. 102.

**<u>Пре избора у претходно звање:</u>**

2.4.1.15 Katarina Nešović, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, "Poly(vinyl alcohol)/chitosan/graphene hydrogels with silver nanoparticles for applications in biomedicine", 54th Meeting of the Serbian Chemical Society, Faculty of Technology and Metallurgy, Belgrade, Serbia, 29-30 September 2017, Book of Abstracts, EH 08, p. 25.

2.4.1.16 Milena Stevanović, Marija Đošić, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Mišković-Stanković, "Biocompatible coating hydroxyapatite/chitosan/gentamicin obtained by electrophoretic deposition on titanium from aqueous suspension", 54th Meeting of the Serbian Chemical Society, Faculty of Technology and Metallurgy, Belgrade, Serbia, 29-30 September 2017, Book of Abstracts, EH 09, p. 26.

2.4.1.17 Sanja Eraković, **Ana Janković**, Miodrag Mitrić, Ivana Z. Matić, Maja Vukašinović-Sekulić, Kyong Yop Rhee, Soo Jin Park, Vesna Mišković-Stanković, „Koroziona stabilnost kompozitnih prevlaka na bazi grafena u simuliranoj telesnoj tečnosti", 53. Savetovanje Srpskog hemijskog društva, Kragujevac, Srbija, 10-11 Juni 2016, Kratki izvodi radova radova (CD Rom), EHP04, str. 40.

2.4.1.18 Sanja Eraković, Marija Đošić, Rade Surudžić, **Ana Janković**, Tatjana Stevanović, Vesna Mišković-Stanković, „SEM i XRD analiza prevlaka hidroksiaptita i kompozitnih hidroksiapatit/lignin prevlaka na titanu u simuliranoj telesnoj tečnosti", 50. Savetovanje Srpskog hemijskog društva, 14-15 Juni 2012, Beograd, Knjiga apstrakata (CD Rom), EHP4, str. 28.

## 2.5. МАГИСТАРСКЕ И ДОКТОРСКЕ ТЕЗЕ – М70

### 2.5.1. Одбрањена докторска дисертација – М70

**Ana D Jankovic**, "Isothermal Titration Calorimetry Studies of Protein-mediated Interactions and Preliminary Structural Studies of Tandem PDZ1-2 Domain of PSD-95 Protein" Wayne State University 2009, Detroit, MI, USA.

## 2.6. ПАТЕНТИ – М80

### 2.6.1. Регистрован патент на националном нивоу – М92=12

**<u>После избора у претходно звање:</u>**

**2.6.1.1** Мишковић-Станковић В., Ераковић С., Ђошић М., **Јанковић А**., „Добијање биокомпатибилних композитних превлака хидроксиапатит/хитозан/графен на титану—, број патентне апликације: P-2015/0785, Број регистрације патента. 58334, Завод за интелектуалну својину Републике Србије, регистрован патент под бројем 2019/4508 од 12.03.2019. Носилац права ТЕХНОЛОШКО-МЕТАЛУРШКИ ФАКУЛТЕТ УНИВЕРЗИТЕА У БЕОРАДУ https://www.zis.gov.rs/wp-content/uploads/Glasnik_03_2019.pdf

**Број коаутора**: 4 **М92** = 12

## 2.7 ИЗВЕДЕНА ДЕЛА, НАГРАДЕ, СТУДИЈЕ, ИЗЛОЖБЕ, ЖИРИРАЊА И КУСТОСКИ РАД ОД МЕЂУНАРОДНОГ ЗНАЧАЈА – М100

### 2.7. 1. Награда на изложби – М104=2 (5x2=10)

**<u>После избора у претходно звање:</u>**

2.7.1.1 Veljović Đorđe, Đošić Marija, Zvicer Jovana, Zebić Maja, Janaćković Đorđe, **Janković Ana**, Matić Tamara, Miletić Vesna, Nešović Katarina, Obradović Bojana, Osmokrović Andrea, Petrović Rada, Mišković Stanković Vesna, Stevanović Milena i Stojkovska Jasmina, "Novi multifunkcionalni biomaterijali za primenu u medicini", Zlatna medalja za inovaciju, 35. Međunarodni festival inovacija, znanja i stvaralaštva TESLA FEST 2021, 12-15. oktobar, 2021, Novi Sad, Srbija, Katalog str. 5.

2.7.1.2 Sofija Petković, Katarina Nešović, **Ana Janković**, Aleksandra Perić-Grujić, Maja Vukašinović-Sekulić, Vesna Kojić, Vesna Mišković-Stanković, "Electrochemical synthesis of silver nanoparticles in poly(vinyl alcohol) and alginate hydrogels", 57th Meeting of the Serbian Chemical Society, 18-19 juni 2021, Najbolja posterska saopštenja - IUPAC Poster Prize. https://www.shd.org.rs/index.php/57sshd

2.7.1.3 V. Mišković-Stanković, M. Đošić, **A. Janković,** M. Stevanović, Biocompatible composite hydroxyapatite/chitosan coatings with gentamicin on titanium deposited from aqueous suspension—, Award Silver Medal with Nikola Tesla's Face, 35. International exibition of inventions, new technologies, industrial design and IV nations cup of young innovators 2018, Inventions-Belgrade, 2018, Belgrade 07-11.05.2018., Catalog, p. 77-78.

2.7.1.4 Vesna Mišković-Stanković**, Ana Janković,** Katarina Nešović, Novel poly(vinyl alcohol)/chitosan/graphene hydrogels with silver nanoparticles for biomedical applications, Award Silver Medal with Nikola Tesla's Face, 35. International Exhibition of Inventions, New Technologies and Design, Belgrade, Serbia, 2018, Catalogue, p. 76.

2.7.1.5 Vesna Mišković-Stanković**, Ana Janković,** Katarina Nešović, Novel poly(vinyl alcohol)/chitosan/graphene hydrogels with silver nanoparticles for biomedical applications, Cup of Organizer of International Salon of Inventions and New Technologies "New Time", Sevastopol, Russian Federation, May 7-11, 2018.

**Пре избора у претходно звање:**

2.7.1.6 Mišković-Stanković V., Jevremović I., **Janković A.**, "Production of composite polyvinyl alcohol/graphene hydrogels discs with incorporated silver nanoparticles", XIII INTERNATIONAL SALON OF INVENTIONS AND NEW TECHNOLOGIES "New Time", September 28-30, 2017, Sevastopol, Russian Federation. (Diploma awarded Gold medal) https://www.ifia.com/ifia-members/collaborating-members/new-time/

2.7.1.7 Milena Stevanović, Marija Đošić, **Ana Janković**, Maja Vukašinović-Sekulić, Vesna Mišković-Stanković, "Biocompatible coating hydroxyapatite/chitosan/gentamicin obtained by electrophoretic deposition on titanium from aqueous suspension", 54th Meeting of the Serbian Chemical Society, Faculty of Technology and Metallurgy, Belgrade, Serbia, 29-30 September 2017, Najbolja posterska saopštenja - IUPAC Poster Prize. http://www.shd.org.rs/54SHD/

2.7.1.8 Mišković-Stanković V., Jevremović I., **Janković A.**, Pronalazak „Dobijanje kompozitnih diskova hidrogelova polivinil alkohol/grafen sa inkorporisanim nanočesticama srebra",34. Međunarodna izložba pronalazaka, novih tehnologija i industrijskog dizajna „Pronalazaštvo-Beograd 2016", Savez pronalazača Beograda, Katalog 34. međunarodne izložbe pronalazaka, novih tehnologija i industrijskog dizajna „Pronalazaštvo – Beograd 2016", str. 93-95, Beograd, 26-30. 09. 2016., ISBN 978-86-910813-5-7 (Zlatna medalja sa likom Nikole Tesle u oblasti novih tehnologija).

**2.7. 2. Учешће на изложби – М105=1 (2x1=2)**

**После избора у претходно звање:**

2.7.2.1 Весна Мишковић-Станковић, Марија Ђошић, **Ана Јанковић**, Милена Стевановић, Биокомпатибилне композитне превлаке хидроксиапатит/хитозан са гентамициномна титану таложене из водене суспензије, 62. Међународни Сајам технике и техничких достигнућа, Београд 21-25.05.2018.

2.7.2.2 Весна Мишковић-Станковић, **Ана Јанковић**, Катарина Нешовић, Нови поливинил-алкохол/хитозан/графен хидрогелови са наночестицама сребра за примене у биомедицини, 62. Међународни Сајам технике и техничких достигнућа, Београд 21-25.05.2018.

**Пре избора у претходно звање:**

2.7.2.3 М. Ђошић, **А. Јанковић**, М. Стевановић, В. Мишковић-Станковић, Електрохемијски добијене биоактивне нанокомпозитне превлаке на бази хидроксиапатита и хитозана ојачаних графеном за примене у медицини, 61. Међународни Сајам технике и техничких достигнућа, Београд, 15-19. мај 2017.

**2.8. РАД У ОКВИРУ АКАДЕМСКЕ ДРУШТВЕНЕ ЗАЈЕДНИЦЕ**

**Организација научних скупова**

2.8.1 Члан Организационог одбора First International Conference on Processing, characterisation and application of nanostructured materials and nanotechnology (NanoBelgrade 2012), Belgrade, Serbia, 2012.

2.8.2 Члан Организационог одбора COST 7$^{th}$ MC meeting, S&T and Focus Group meetings одржан у Београду, од 26. фебруара до 2. марта 2018. године *(Прилог А)*

**2.9. НАУЧНА САРАДЊА И САРАДЊА СА ПРИВРЕДОМ**

**Учешће у пројектима финансираним од стране надлежног Министарства**

2.9.1 Пројекат III 45019 Министарства просвете, науке и технолошког развоја Републике Србије под називом: „Синтеза, развој технологија добијања и примена наноструктурних мултифункционалних материјала дефинисаних својстава“, 2011-2019.

**Учешће у међународним научним пројектима**

2.9.2 REGPOT-FP7 “Reinforcing of Nanotechnology and Functional Materials Centre” (No: 245916) у оквиру Nanotechnology and Functional Matrials Centre на Технолошко-металуршком факултету, Универзитета у Београду, 2010 – 2012. http://cordis.europa.eu/result/rcn/56353_en.html

2.9.3 *TD COST Action TD1305: Improved Protection of Medical Devices Against Infection* (iPROMEDAI), European Cooperation in Science and Technology – COST, 2014-2018. (MC substitute). http://www.ipromedai.net/

2.9.4 “Twinning to excel materials engineering for medical devices –ExcellMater“ grant no. 952033, H2020-WIDESPREAD-2018-2020/H2020-WIDESPREAD-2020-5, 2020-2023 (заменик руководилоца радног пакета). ExcellMater (bg.ac.rs)

## 3. АНАЛИЗА ПУБЛИКОВАНИХ РАДОВА

Др Ана Јанковић до сада има објављена два рада у међународним часописима изузетних вредности (2М21а), четрнаест радова у врхунским међународним часописима (14М21), три рада у истакнутим међународним часописима (3М22), три рада у међународним часописима (3М23), један рад у националном часопису међународног значаја (1М24), један рад у врхунском часопису националног значаја (1М51), и један рад у међународном часопису ван СЦИ листе, тридесет научних саопштења у зборницима међународних скупова (30М34) и осамнаест научних саопштења у зборнику националног скупа (18М64) (списак референци је у прилогу). До сада има један регистрован патент на националном нивоу (1М92).

Радови и саопштења које је до сада публиковала др Ана Јанковић могу да се поделе у неколико група, на основу тема истраживања и резултата који су у њима приказани.

У оквиру израде докторске тезе на Wayne State University научно-истраживачки рад кандидата обухватио је студије термодинамике интеракција тандем PDZ домена протеина PSD-95 са пептидно-базираним лигандима, као и кристализацију са прелиминарним X-ray кристалографским истраживањима истог дуал протеинског домена, карактеризацију афинитета јона гвожђа ка фратаксин протеину помоћу титрационе калориметрије, као и структурно одредјивање метало-протеина на нивоу атома користећи X-ray Absorpcionu Spektroskopiju. Из ове проблематике је објављен штампани рад (1М21) 2.1.2.14 и одбрањена докторска дисертација 2.5.1.

Други део истраживања се односи на добијање и карактерисање електрофоретских превлака хидроксиапатита допираних сребром, као и биокомпозитних Ag/ хидроксиапатит/лигнин превлака на титану и испитивање утицаја концентрације лигнина на морфологију, структуру и термичко понашање Ag/ хидроксиапатит/лигнин превлака. Испитивана су антимикробна својства и цитотоксичност биокомпозитних Ag/хидроксиапатит/лигнин превлака и утврђено је да оптимална концентрација лигнина од 1 mas. % није цитотоксична за испитане периферне ћелије крви. Такође, крајњи циљ истраживања је испитивање корозионе стабилности биокомпозитних хидроксиапатит/лигнин превлака, са и без сребра, пре и након термичког третмана, у симулираној телесној течности на температури од 37 ºC. Синтероване превлаке су се показале да имају изузетну корозиону стабилност у поређењу са несинтерованим превлакама. Из ове проблематике објављена су три рада у врхунским међународним часописима **(3М21) 2.1.2.11, 2.1.2.12, 2.1.2.13** објављен рад у

међународном часопису **(1М23) 2.1.4.3**, а на међународним научним скуповима саопштени радови **(5М34) 2.2.1.16, 2.2.1.27, 2.2.1.28, 2.2.1.29, 2.2.1.30** и на националном научном скупу саопштен рад **(1М64) 2.4.1.18**.

У оквиру студијских боравака током 2012. године на NILPRP-The Laser-Surface-Plasma Interactions Laboratory, National Institute for Laser, Plasma and Radiation Physics у Букурешту, Румунија примењена је техника ласерски асистиране депозиције и формирања такних превлака овом напредном методом. Истраживања на систему биокомпозита Ag/ хидроксиапатит/лигнин подразумевају наношење танких филмова на плочице титана техникама Pulsed Laser Deposition (PLD) и Matrix Assisted Pulsed Laser Evaporation (MAPLE). Потпуна је физичко-хемијска карактеризација је урађена на NILPRP, Румунија. Истраживања су била фокусирана на антимикробно дејство превлака добијених ласер депозицијом на титану. Тестирани су сојеви *Staphylococcus aureus, Pseudomonas aeruginosa* и *Candida famata*. Утврђено је да су биокомпозитне хидроксиапатит/лигнин превлаке допиране сребром показале бактерицидни ефекат, нарочито према *C. famata*. Из ове области истраживања објављен је један рад у врхунском међународном часопису **(1М21) 2.1.2.10**, један рад у истакнутом међународном часопису **(1М22) 2.1.3.2**, као и четири саопштења са међународних скупова штампаних у изводу **(4М34) 2.2.1.23, 2.2.1.24, 2.2.1.25** и **2.2.1.26**.

Трећа група радова одраз је истраживања чији је фокус употреба графена, нарочито у сврху добијања и карактерисања електрофоретских превлака хидроксиапатита допираних сребром, као и биокомпозитних Ag/хидроксиапатит/графен превлака на титану. Све превлаке таложене су из етанолских суспензија. Графен је од 2004. године представљен као материјал будућности, те је потенцијално веома је значајан његов утицај на морфологију, структуру и термичко понашање Ag/хидроксиапатит/графен превлака и детаљно је карактерисан следећим методама SEM, FE-SEM, TGA, Raman спектроскопија, FTIR, XPS i XRD. Доказано је формирање новог слоја апатита, што указује на биолошки раст карбонатног HAP-а током само 7 дана потапања у SBF. Ова биоактивност Ag/HAP/Gr композитне превлаке детаљно је карактерисана EIS, као и резултатима XRD и FE-SEM. Цитотоксичност биокомпозитних Ag/хидроксиапатит/графен превлака испитивана је при концентрацији графена од 1 мас. % у коначној маси превлаке за испитане периферне ћелије крви. Испитивана је и антимикробна активност добијених превлака на бактеријским сојевима *Staphylococcus aureus* и *Escherichia coli* методом преживљавања у раствору и агар дифузионим тестом. Резултати су веома охрабрујући јер су превлаке допиране сребром показале одлична бактерицидна својства већ у прва 3h након инкубације, што потврђује способност спречавања настанка биофилма, кључну особину за све антибактеријске имплантате. Зона инхибиције је нарочито изражена око узорака Ag/хидроксиапатит/графен у случају *S.aureus*. Из ове области истраживања објављена су два рада у врхунском међународном часопису **(2М21) 2.1.2.8 i 2.1.2.9**, један рад у истакнутом међународном часопису **(1М22) 2.1.3.3**, као и шест саопштења са међународних скупова штампаних у изводу **(6М34) 2.2.1.17, 2.2.1.18, 2.2.1.19, 2.2.1.20, 2.2.1.21, 2.2.1.22**, као и саопштења са националног скупа штампано у изводу **(1М64) 2.4.1.17**.

Истраживања биоактивнх превлака на титану су проширена и у смеру укључивања полимера и формирања нових композита. Избор је био природни полимер хитозан. Електрофоретска депозиција је успешно примењена за формирање нетоксичних биоактивних композитних превлака на бази HAP-а, хитозана и графена на Ti супстратима, а њихове интеракције су карактерисане анализама XRD, FT-IR, TG/DTG, FE-SEM и XPS. Промене величине кристалита за HAP/CS i HAP/CS/Gr превлаке у односу на чист HAP, откривају хемијске интеракције између HAP-а, хитозана и графена, где графен делује као нанофилер у полимерној матрици хитозана. Превлака HAP/CS/Gr показује највећу отпорност на корозију и најмањи степен корозије у SBF-у, због биомиметичког карбонатног слоја HAP-а на њеној површини. Обе композитне превлаке HAP/CS i HAP/CS/Gr су класификоване као

нецитотоксичне када су тестиране на здравим PBMC (peripheral blood mononuclear cells) ћелијама, а антибактеријска активност против *S. aureus* и *E. coli* није могла бити потврђена. Поступак добијања и потпуна карактеризација на овај начин добијеног хидроксиапатит/хитозан/графен композита регистрован је као национални патент **(1M92) 2.6.1.1**, а потом у врхунском међународном часопису **(1M21) 2.1.2.6**. и у једном прегледном раду **(1M24) 2.1.6.1**. У поменутом прегледном раду нарочито је истакнут утицај графена на морфологију, структуру и термичко понашање биокомпозитних превлака.

Познато је да стандардна процедура након имплантације коштаних имплантата подразумева системску примену антибиотика. Најчешће, антибиотик избора је гентамицин. Међутим, овакав начин примене подразумева терапије високим концентрацијама лека, уз недовољну ефективну концентрацију лека на жељеном месту. Управо из тог разлога, неколико година уназад, истраживања кандидаткиње фокусирана су на имплементацију изабраног антибиотика-гентамицина (Gent) у композитну превлаку ради постизања високих локалних концентрација лека без изазивања цитотоксичног ефекта. Етанолски систем из којег су електрофоретски таложене превлаке у претходној серији истраживања, замењен је воденим системом, што је од изузетног значаја имајући у виду да изузимање сваке потенцијално токсичне компоненте из процеса добијања биоматеријала чини тај материјал безбеднијим за примену у медицини. Композитне превлаке хидроксиапатит/хитозан (HAP/CS) и хидроксиапатит/хитозан/гентамицин (HAP/CS/Gent) на титану успешно су добијене катафоретским таложењем у једном ступњу из воденог система. Превлаке су имале хомогену структуру, без прскотина и добру адхезију. XRD анализом потврђено је да је величина кристалита хидроксиапатита мања код превлаке која садржи гентамицин (HAP/CS/Gent, 397 Å) у поређењу са превлаком без антибиотика (HAP/CS, 511 Å). FT-IR анализом потврђено је формирање водоничних веза између −OH група у хидроксиапатиту са −OH и −NH2 групама из хитозана, док је XPS анализом потврђено да се гентамицин везује за HAP/CS матрикс. Термичка стабилност превлака је мања након инкорпорисања гентамицина у превлаку. HAP/CS/Gent превлака показала је високу антибактеријску активност према Грам-позитивним бактеријама *Staphylococcus aureus* и Грам-негативним бактеријама *Escherichia coli*, за разлику од превлаке без антибиотика која није показала антибактеријска својства. Обе композитне превлаке показале су нецитотоксичан ефекат на хумане (MRC-5) и мишје (L929) фибробласте. Иако је укупна количина инкорпорисаног гентамицина у превлаку, током електрофоретског таложења, била мала (7,3 ± 0,1 μg по 1 cm2 HAP/CS/Gent превлаке) показано је да превлака има веома високу антибактеријску активност што је од изузетног значаја за будућа медицинска истраживања и евентуалну примену. Резултати ових истраживања публиковани су у једном врхунском часопису међународног значаја **(1M21) 2.1.2.5** и саопштени на скуповима међународног значаја **(5M34) 2.2.1.19., 2.2.1.18., 2.2.1.16, 2.2.1.15. и 2.2.1.12** и националног значаја, саопштења **(6M64) 2.4.1.16, 2.4.1.14, 2.4.1.12, 2.4.1.11, 2.4.1.10 и 2.4.1.9.** Презентована истраживања освојила су међународну награду – Сребрна медаља са ликом Николе Тесле у области нових технологија **(1M104) 2.7.1.2**. Важно је истаћи да су презентована истраживања привукла пажњу и освојила награду IUPAC – награду за постерску презентацију **(1M104) 2.7.1.6**.

У циљу испитивања биоактивности електрофоретски таложених превлака HAP/CS и HAP/CS/Gent (*in vitro* услови), превлаке су потапане у симулирану телесну течност на 37°C и карактерисане FE-SEM, XRD и FT-IR техникама. Резултати добијени применом ових техника јасно показују да је HAP, настао након потапања у SBF, карбонатно супституисан, указујући на сличност са биолошким апатитом. Ови резултати наводе на закључак да су се материјали који су добијени показали као веома перспективни у смислу потенцијалне примене у медицини. Раст новог слоја HAP потврђен је и спектроскопијом електрохемијске импеданције. Резултати теста активности акалне фосфатазе (повећање од скоро 50%) показали су да обе превлаке имају способност да индукују раст нове кости, што их чини веома перспективним материјалима за

даља истраживања и примену у медицини. Превлака са инкорпорисаним антибиотиком, гентамицином (HAP/CS/Gent) показала је повољан ефекат наглог отпуштања гентамицина (након 7 дана отпуштено је око 50% укупне количине антибиотика). Овиме је несумњиво потврђено да инкорпорисање антибиотика у превлаку обезбеђује високу локалну концентрацију антибактеријског агенса (антибиотика) и представља једно од могућих решења против стварања биофилма у иницијалном периоду након пласирања имплантата (током прва два дана отпуштено је око 21% укупне количине антибиотика). Ови резултати публиковани су у једном раду у истакнутом часопису међународног значаја **(1M22) 2.1.3.1**., једном прегледном раду публикованом у часопису међународног значаја **(1M23) 2.1.4.1.** и саопштени на скупу међународног значаја **(2M34) 2.2.1.18 и 2.2.1.6** и националном скупу (саопштење под бројем **(1M34) 2.4.1.5.**

Применом електрофоретског таложења успешно су добијене тро- и четворокомпонентне превлаке HAP/CS/Gr и HAP/CS/Gr/Gent на титану из водене суспензије. Добијене су униформне превлаке, хомогене површине и без прскотина. Један од разлога је присуство графена, који има улогу „везујућег— материјала, правећи везе (мостове) кроз полимерну основу, спречавајући формирање прскотина у превлаци. Додатак гентамицина не утиче на морфологију превлаке, али доводи до смањења величине кристалита хидроксиапатита у односу на величину кристалита хидроксиапатита код превлаке без антибиотика, што је веома значајно са становишта биоактивности материјала. Додатно, FTIR анализом је показано присуство карбонатно супституисаног хидроксиапатита, АБ-типа, што је потврђено и XPS анализом. Такође, XPS анализом је потврђено да се гентамицин везује за полимер-графенску основу (матрикс). Количина инкорпорисаног антибиотика гентамицина у превлаку HAP/CS/Gr/Gent износила је 8,2 ± 0,1 μg по $cm^2$ превлаке. Иако је ова количина антибиотика веома мала, превлаке са гентамицином су показале веома високу антибактеријску активност према бактеријама *Staphylococcus aureus* и *Escherichia coli*, за разлику од превлаке без антибиотика (HAP/CS/Gr) која није показала антибактеријска својства. У поређењу са количином гентамицина инкорпорисаног у превлаку HAP/CS/Gent (7,3 ± 0,1 μg по 1 $cm^2$, рад **(1M21) 2.1.2.5,** јасно је да присуство графена у превлаци повећава количину инкорпорисаног антибиотика, јер је познато да графен представља веома моћну нано-платформу за депоновање антибиотика. Биокомпатибилност композитних превлака одређена је MTT тестом. Добијене превлаке HAP/CS/Gr/Gent су показале веома низак степен цитотоксичности, када су испитиване на хумане (MRC-5) и мишје (L929) фибробласте. На основу свих добијених резултата, може се закључити да су добијене превлаке веома погодан материјал за употребу у будућности, као део ортопедских имплантата. Добијени резултати публиковани су у међународном часопису изузетних вредности **(1M21a) 2.1.1.1**., у врхунским међународним часописима **(2M21) 2.1.2.1.** и **2.1.2.2.,** и саопштени на скуповима међународног значаја **(4M34) 2.2.1.1., 2.2.1.2., 2.2.1.3.,** и **2.2.1.6**., а шест пута на скуповима националног значаја **(6M64) 2.4.1.1., 2.4.1.2., 2.4.1.3., 2.4.1.5., 2.4.1.7., 2.4.1.8**.

Важно је истаћи да су презентована истраживања привукла пажњу и награђена су још два пута **(2M104)** и то Златном медаљом за иновацију на 35. Међународном фестивалу иновација, знања и стваралаштва ТЕСЛА ФЕСТ-у 2021 **(2.7.1.1)** и Сребрном медаљом са ликом Николе Тесле у области нових технологија 2018 **(2.7.1.3)**

Рад на проблематици инкорпорације графена у различите биоматеријале настављен је и на пројекту електрохемијске синтезе хидрогелова на бази нанокомпозита поливинил-алкохола са наночестицама сребра, оптимизација услова електрохемијске синтезе наночестица сребра у хидрогеловима поливинил-алкохола (PVA), са и без графена (Ag/PVA/Gr i Ag/PVA), одређивање морфологије и електрохемијских карактеристика добијених хидрогелова и испитивање кинетике отпуштања сребра, цитотоксичности и антибактеријских својстава нанокомпозитних хидрогелова за потенцијалну примену у медицини као имплантати меких

ткива. Добијени хидрогелови су нетоксични и са израженим антибактеријским својствима. PVA/Gr нанокомпозит је показао боље механичке особине (чврстоћа повећана за 56,0 % и Young-ov модул за 20,7%) и већу термичку стабилност него чист PVA. Хидрогел PVA/Gr је класификован као нецитотоксичан у односу на здраве мононуклеарне ћелије периферне крви (PBMC) према MTT тесту и показао снажну антибактеријску активност против *S.aureusa*. Ag/PVA/Gr нанокомпозити показали су већу термичку стабилност и боље механичке особине него Ag/PVA нанокомпозити. Споро отпуштање сребра, као и висок садржај остатка сребра (76%) након 28 дана у симулираној телесној течности потврдили су да хидрогелови Ag/PVA/Gr i Ag/PVA могу сачувати стерилност током времена. Ова карактеристика, заједно са њиховом снажном антибактеријском активношћу, указује на то да су Ag/PVA/Gr и Ag/PVA хидрогелови одлични кандидати за имплантате меког ткива и облоге за ране. Оба хидрогела, Ag/PVA и Ag/PVA/Gr значајно су смањили преживљавање бактеријских ћелија *S.aureus* и *E.coli* након само 1 h инкубације у поређењу са почетним бројем ћелија у суспензији. Ag/PVA је смањио број колонија *S. aureus* за логаритамске јединице и за 2 логаритамске јединице број колонија *E.coli*, док је инкубација са Ag/PVA/Gr довела до потпуног смањења *S.aureus* и смањења од 5 логаритамских јединица за *E.coli* колоније. Ag/PVA је после 24 h потпуно редуковао све *S. aureus* колоније и све колоније *E.coli* након 3 h. Насупрот томе, Ag/PVA /Gr је potpuno редуковала број *S. aureus* TL и *E.coli* колонија након 3 h и 24 h, редом. Већа антибактеријска активност Ag/PVA/Gr од Ag/PVA могла би бити последица мањих димензија честица AgNP уграђених у хидрогелну мрежу. Специфичности инкорпорисања графена у сврху побољшања пре свега механичких својстава и ова истраживања резултирала су објављивањем два рада у међународним часописима изузетних вредности **(2M21a) 2.1.1.3 и 2.1.1.4** и једног рада у врхунском међународном часопису **(1M21) 2.1.2.7**, једног рада у међународном часопису **(1M23) 2.1.4.2,** као и саопштења са националног скупа штампано у изводу **(1M64) 2.4.1.15**. Важно је истаћи и да су презентована истраживања освојила и две међународне награде **(2M104)** и то Златна медаља са ликом Николе Тесле у области нових технологија **2.7.1.8** и Златну медаљу на изложби "New Time" 2017, Севастопољ, Русија **2.7.1.6**.

Истраживања су настављена смислу примене еколошки прихватљивог електрохемијског поступка синтезе наночестица сребра директно унутар полимерних матрица хидрогелова поливинил-алкохол/хитозан (Ag/PVA/CHI) и поливинил-алкохол/хитозан/графен (Ag/PVA/CHI/Gr), чиме се избегава коришћење хемијских редукционих агенаса и постиже боља биокомпатибилност добијених материјала. Показало се да су биополимерни хидрогелови и филмови одлични кандидати за развој нових материјала за облоге за ране побољшаних својстава, услед њихових бројних погодних својстава, као што су пропустљивост за пару и гасове, ниска адхезивност, висока моћ бубрења, сорпције и регулације влажности, као и одлична биокомпатибилност. Поред тога, инкорпорација антибактеријских агенаса у саму облогу би омогућила активну заштиту ране од бактеријских инфекција током читавог процеса зарастања. У последње време, приметна је тенденција избегавања примене антибиотика и коришћење алтернативних антибактеријских агенаса, који не изазивају бактеријску резистенцију. Један од најинтересантнијих антибактеријских агенаса који се користе као замена за антибиотике су свакако наночестице сребра, због њиховог познатог дејства на широки спектар микроорганизама. испитан је утицај садржаја хитозана на ефикасност електрохемијске синтезе наночестица сребра, као и на њихову стабилизацију унутар полимерних матрица хидрогелова, док је такође варирана и концентрација наночестица сребра у хидрогелу, како би се испитао њихов утицај на *in vitro* својства као што су цитотоксичност, кинетика бубрења и отпуштања сребра. Добијени резултати указали су на ефикасност електрохемијске синтезе за формирање наночестица сребра веома малих димензија (< 10 nm), док су хидрогелови са већим садржајем хитозана садржали и већу концентрацију наночестица сребра, што је показало да хитозан има значајну улогу у ефикасности синтезе и инкорпорације наночестица сребра. Добијени нанокомпозитни хидрогелови су такође показали одличну способност бубрења и већи

равнотежни степен бубрења у поређењу са хидрогеловима без сребра, што је веома повољно са становишта њихове потенцијалне примене као облога за ране. Контролисано отпуштање сребра постигнуто је током дужег временског периода, при чему се ефекат наглог отпуштања, остварен у првих 2-5 дана, може сматрати врло погодним за иницијалну заштиту ране од инфекције и за спречавање формирања биофилма, док касније лагано отпуштање током 28 дана омогућује дугорочно одржавање стерилности материјала и продужену ефикасност. Кинетика отпуштања сребра је такође испитана у раствору фосфатног пуфера на 37 °C током 28 дана, а концентрација отпуштеног сребра је одређена методом атомске апсорпционе спектроскопије. Добијени профили отпуштања сребра су фитовани различитим литературним моделима (апроксимација раног времена, модели Korsmeyer-Peppas, Makoid-Banakar, Kopcha, као и модели кинетике према законима брзине нултог, првог и другог реда), како би се квантификовали дифузиони и кинетички параметри процеса отпуштања. Антибактеријска својства хидрогелова са и без наночестица сребра испитивана су праћењем кинетике антибактеријске активности у суспензији и агар-дифузионим тестом према сојевима бактерија *Staphylococcus aureus* TL и *Escherichia coli* ATCC 25922, док је цитотоксичност одређена MTT и DET тестовима, на ћелијским линијама хуманих (MRC-5) и мишјих (L929) фибробласта. Добијени резултати публиковани су у међународном часопису изузетних вредности **(1M21a) 2.1.1.2**., у врхунским међународним часописима **(2M21) 2.1.2.3.** и **2.1.2.4.,** и саопштени седам пута на скуповима међународног значаја **(7M34) 2.2.1.4., 2.2.1.5., 2.2.1.7., 2.2.1.8., 2.2.1.9., 2.2.1.13.,** и **2.2.1.14.,** а шест пута на скуповима националног значаја **(6M64) 2.4.1.4., 2.4.1.5., 2.4.1.6., 2.4.1.9., 2.4.1.11., 2.4.1.13**. Ова истраживања су освојила и три међународне награде **(3M104)** и то Златну медаља за иновацију, 35. Међународни фестивал иновација, знања и стваралаштва ТЕСЛА ФЕСТ-у 2021 **(2.7.1.1)**, Сребрну медаљу са ликом Николе Тесле у области нових технологија 2018 **(2.7.1.4)** и Куп организатора на изложби “New Time“, Севастопољ, Русија 2018 **(2.7.1.5).** Важно је истаћи да су презентована истраживања привукла пажњу и освојила награду IUPAC – награду за постерску презентацију (**1M104) 2.7.1.2**.

**3.1. ЛИСТА ПЕТ НАЈЗНАЧАЈНИЈИХ НАУЧНИХ РЕЗУЛТАТА Др Ане Јанковић**

**Рад у међународном часопису изузетних вредности - M21a**

3.1.1 Katarina Nešović, **Ana Janković,** Vesna Kojić, Maja Vukašinović-Sekulić, Aleksandra Perić-Grujić, Kyong Yop Rhee, Vesna Mišković-Stanković, Silver/poly(vinyl alcohol)/chitosan/graphene hydrogels – Synthesis, biological and physicochemical properties and silver release kinetics,*Compos Part B-Eng* **154** (2018)175-185. (Materials Science, Composites, 1/25, IF (2018) = 6.864) ISSN 1359-8368. Publisher: Elsevier https://doi.org/10.1016/j.compositesb.2018.08.005.

3.1.2 Milena Stevanović, Marija Djošić, **Ana Janković**, Vesna Kojić, Jovica Stojanović, Svetlana Grujić, Ivana Matić Bujagić, Kyong Yop Rhee, Vesna Mišković-Stanković, The chitosan-based bioactive composite coating on titanium, *J Mater Res Technol* 15, (2021) 4461-4474, (Metallurgy & Metallurgical Engineering, 5/79, IF(2019)= 5.289) ISSN 2238-7854, Publisher: Elsevier https://doi.org/10.1016/j.jmrt.2021.10.072.

**Рад у врхунском међународном часопису – M21**

3.1.3 Milena Stevanović, Marija Djošić, **Ana Janković**, Vesna Kojić, Maja Vukašinović-Sekulić, Jovica Stojanović, Jadranka Odović, Milkica Crevar Sakač, Rhee Kyong Yop, Vesna Mišković-Stanković, Antibacterial graphene-based hydroxyapatite/chitosan coating with gentamicin for potential applications in bone tissue engineering. *J Biomed Mater Res. A* **108** (2020) 2175– 2189. (Engineering, Biomedical, 25/90, IF (2020) = 4,396), ISSN 1549-3296. Publisher: Wiley https://doi.org/10.1002/jbm.a.36974

3.1.4 Katarina Nešović, **Ana Janković**, Aleksandra Perić-Grujić, Maja Vukašinović-Sekulić, Tamara Radetić, Ljiljana Živković, Soo-Jin Park, Kyong Yop Rhee, Vesna Mišković-Stanković, Kinetic models of swelling and thermal stability of silver/poly(vinyl alcohol)/chitosan/graphene hydrogels, *Journal of Industrial and Engineering Chemistry* **77** (2019) 83-96, (Engineering, Chemical, 21/143, IF (2019) = 5.278)ISSN 1226-086X. Publisher: Elsevier https://doi.org/10.1016/j.jiec.2019.04.022.

**Регистрован патент на националном нивоу – M92**

3.1.5 Mišković-Stanković V., Eraković S., Djošić M., **Janković A.**, „Dobijanje biokompatibilnih kompozitnih prevlaka hidroksiapatit/hitozan/grafen na titanu“, objava patentne prijave broj P-2015/0785. Broj registracije patenta. 58334, Zavod za intelektualnu svojinu Republike Srbije, registrovan patent pod brojem 2019/4508 od 12.03.2019. Nosilac prava TEHNOLOŠKO-METALURŠKI FAKULTET UNIVERZITEA U BEOGRADU (Prilog) https://www.zis.gov.rs/wp-content/uploads/Glasnik_03_2019.pdf

## 4. ЦИТИРАНОСТ РАДОВА

Укупна цитираност кандидата износи 1129, односно **1053 хетероцитата** (март 2023), извор: Scopus. Према истој индексној бази Хиршов индекс је **18**. Цитирани су следећи радови:

*Milena Stevanović, Marija Djošić, **Ana Janković**, Vesna Kojić, Jovica Stojanović, Svetlana Grujić, Ivana Matić Bujagić, Kyong Yop Rhee, Vesna Mišković-Stanković, The chitosan-based bioactive composite coating on titanium, J Mater Res Technol 15, (2021) 4461-4474.* ***Цитиран 4 пута (БЕЗ АУТОЦИТАТА).***

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*Vesna Mišković-Stanković,* ***Ana Janković****, Sanja Eraković, Kyong Yop Rhee "Graphene Based Biomedical Composite Coatings Produced by Electrophoretic Deposition on Titanium" Eurasian Chemico-Technological Journal* ***17*** *(2015) 3-15. ISSN 1562-3920. Publishier: Institute of Combustion Problems* ***Цитиран 7 пута (БЕЗ АУТОЦИТАТА)****.*

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## 5. ЕЛЕМЕНТИ ЗА КВАЛИТАТИВНУ ОЦЕНУ НАУЧНОГ ДОПРИНОСА КАНДИДАТА И МИНИМАЛНИ КВАНТИТАТИВНИ УСЛОВИ ЗА ИЗБОР

### 5.1. Показатељи успеха у научном раду

Показатељи успеха у научном раду који квалификују кандидата др Ану Јанковић у предложеном научном звању су:

- Коаутор је четири рада у међународним часописима изузетних вредности (4М21а), четрнаест радова у врхунским међународним часописима (14М21), три рада у истакнутим међународним часописима (3М22), три рада у међународним часописима (2М23), једног рада у националном часопису међународног значаја (1М24), једног рада у врхунском часопису националног значаја (1М51) и једног рада у међународном часопису ван SCI листе, 34 научна саопштења у зборницима међународних скупова (34М34) и 18 научних саопштења у зборнику националног скупа (18М64) (списак референци је у прилогу). До сада има регистрован један патент на националном нивоу (1М92).
- Као члан истраживачког тима, освојила је укупно седам међународних награда и то Златну медаља за иновацију, 35. Међународни фестивал иновација, знања и стваралаштва ТЕСЛА ФЕСТ 2021, две награде - Сребрне медаље са ликом Николе Тесле у области нових технологија (35. International exibition of inventions, new technologies, industrial design and IV nations cup of young innovators 2018), Златну медаљу са ликом Николе Тесле у области нових технологија (34. International exibition of inventions, new technologies, industrial design and IV nations cup of young innovators 2016), Златну медаљу (XIII INTERNATIONAL SALON OF INVENTIONS AND NEW TECHNOLOGIES "New Time", September 28-30, 2017, Sevastopol, Russian Federation), Куп организатора (International Salon of Inventions and New Technologies "New Time", Sevastopol, Russian Federation, May 7-11, 2018.) и IUPAC-ову награду за постерску презентацију (IUPAC Poster Prize, 54th Meeting of the Serbian Chemical Society, 2017).
- Тренутно је ангажована на пројекту "Twinning to excel materials engineering for medical devices –ExcellMater" grant no. 952033, H2020-WIDESPREAD-2018-2020/H2020-WIDESPREAD-2020-5, 2020-2023, као заменица руководиоца радног пакета, односно руководи радним задацима дисеминације резултата пројекта путем друштвених мрежа и QA анализом активности (евалуациони формулари).
- Била је члан организационог одбора First International Conference on Processing, characterisation and application of nanostructured materials and nanotechnology (NanoBelgrade 2012), Београд, Србија, 2012.
- Учествовала је у истраживањима у оквиру међународног *TD COST Action TD1305: Improved Protection of Medical Devices Against Infection (iPROMEDAI)*, European Cooperation in Science and Technology – COST, 2014-2018. у оквиру кога је присуствовала састанку у Valletti, Malta 18.04-22.04.2017. године.
- У оквиру у оквиру међународног *TD COST Action TD1305: iPROMEDAI* COST акције похађала је и Training school на Université Libre de Bruxelles ULB у Бриселу у периоду 21.03.2018 – 23.03.2018.
- Учествовала је у истраживањима у оквиру међународног REGPOT-FP7 projekta "Reinforcing of Nanotechnology and Functional Materials Centre" (No: 245916) у оквиру кога је имала три студијска боравка током 2012. године на NILPRP-The Laser-Surface-Plasma Interactions Laboratory, National Institute for Laser, Plasma, and Radiation Physics у Букурешту, Румунија.
- Активно је учествала на националном пројекту III 45019 Министарства просвете, науке и технолошког развоја Републике Србије под називом: „Синтеза, развој технологија

добијања и примена наноструктурних мултифункционалних материјала дефинисаних својстава “, 2011-2019.

- Докторска дисертација је урађена на „Wayne State University”, Мичиген, САД у оквиру које је више пута боравила на „Brookhaven Natinonal Laboratory”, Upton, NY, USA и на „SLAC National Accelerator Laboratory, Stanford University”, CA, USA.
- Тренутно је коментор једне докторске дисертације која је у току а до сада је била члан комисије две одбрањене докторске дисертације. Била је и члан комисије три мастер тезе. Учествовала у изради више дипломских и завршних радова.
- Руководила је пројектним задатком у оквиру потпројекта 2 пројекта III 45019, 2011-2019. “Биолошке карактеристике биоматеријала за примене у медицини као имплантати коштаног и меких ткива“ која су укључивала испитивање цитотоксичности и антибактеријске активности биоматеријала добијених елекрохемијским поступцима. (*Прилог А*).
- Била је изабрана за рецензета 3 пројекта COST Action – External Expert 2018, 2019 и 2021. Позиви (Open Call Collection OC-2018-1, COST OC-2019-1 Open Call, COST OC-2021-1 Open Call)
- Рецензирала је више радова за међународне часописе: ACS Applied Nano Materials (M21, IF = 6.140), ACS Biomaterials Science & Engineering (M21, IF = 5.395), ACS Applied Materials & Interfaces (M21a, IF = 10.383), Surface and Coatings Technology (M21, IF = 4.865), Materials Research (M23, IF = 1,511), Journal of the Serbian Chemical Society (M23, IF = 1,100), Hemijska Industrija (M23, IF = 0,774) итд. Ana Jankovic (0000-0002-5605-3297) (orcid.org)

**5.2. Развој услова за научни рад, образовање и формирање научних кадрова**

Др Ане Јанковић је учествовала у истраживањима у оквиру једног домаћег и два међународна научно-истраживачка пројекта, а тренутно је ангажована у оквиру једног међународног пројекта.

- FP7-REGPOT-2009-1, NANOTECH FTM - Reinforcing of Nanotechnology and Functional Materials Centre -Grant Agreement 245916, 2009-2012
- “Синтеза, развој технологија добијања и примена наноструктурних мултифункционалних материјала дефинисаних својстава“, евиденциони број III 45019, 2011-2019.
- *TD COST Action TD1305: Improved Protection of Medical Devices Against Infection* (iPROMEDAI), European Cooperation in Science and Technology – COST, 2014-2018. (MC substitute)
- “Twinning to excel materials engineering for medical devices –ExcellMater“ grant no. 952033, H2020-WIDESPREAD-2018-2020/H2020-WIDESPREAD-2020-5, 2020-2023

Др Ане Јанковић је била ангажована на пројекту Министарства просвете, науке и технолошког развоја који спада у интегрална и интердисциплинарна истраживања, у оквиру кога је активно учествовала у организацији и реализацији истраживачких задатака током реализације пројекта ”Синтеза, развој технологија добијања и примена наноструктурних, мултифункционалних материјала дефинисаних својстава”, евиденциони број III45019. У оквиру наведеног пројекта руководила је пројектним задатком „Биолошке карактеристике биоматеријала за примене у медицини као имплантати коштаног и меких ткива“ која су укључивала испитивање цитотоксичности и антибактеријске активности биоматеријала добијених елекрохемијским поступцима. (*Прилог А*).

Тренутно је ангажована на пројекту“Twinning to excel materials engineering for medical devices –ExcellMater“ grant no. 952033, H2020-WIDESPREAD-2018-2020/H2020-WIDESPREAD-2020-5, 2020-2023. где је ангажована као заменица руководиоца радног пакета, односно руководи радним задацима дисеминације резултата пројекта путем друштвених мрежа и QA анализом активности (евалуациони формулари) (*Прилог А*).

Током свог досадашњег научно-истраживачког рада др Ана Јанковић је учествовала у изради експерименталног дела, осмишљавању тока и тумачењу резултата докторских дисертација 2 кандидата, а тренутно је коментор једне докторске дисертације која је у току. О ангажовању сведоче Одлуке Наставно-научних већа факултета о чланству у Комисијама за оцену и одбрану докторске дисертације или писаним захвалницама и заједничким публикованим радовима са кандидатима, проистеклих из дисертација (*Прилог А*).

**Ментор докторске дисертације која је у току**

Веће научних области техничких наука Универзитета у Београду је донело Одлуку 02 Бр. 61206-4891/2-22, од 12.12.2022. године, којом се ДАЈЕ САГЛАСНОСТ на одлуку Наставно-научног већа Технолошко-металуршког факултета о прихватању теме докторске дисертације МИЛЕНЕ СТЕВАНОВИЋ, под називом: „Електрофоретске композитне превлаке хидроксиапатита, хитозана и графена на титану са и без додатка гентамицина“ и одређивању проф. др Ђорђа Јанаћковића и др Ане Јанковић, вишег научног сарадника Иновационог центра Технолошко-металуршког факултета у Београду за менторе.

1. Милена Стевановић „Електрофоретске композитне превлаке хидроксиапатита, хитозана и графена на титану са и без додатка гентамицина“ Одлука Универзитета у Београду 02 Бр. 61206-174/2-20, од 23.01.2020. године (*Прилог А*).

Поред тога, др Ана Јанковић има 5 заједничких радова са Миленом Стевановић: рад категорије М21а је означен као 2.1.1.1., и 2 рада категорије М21 означена са 2.1.2.2. и 2.1.2.5., рад категорије М22 је означен као 2.1.3.1. и рад категорије М23 означен као 2.1.4.1. у списку радова.

**Члан комисије одбрањених докторских дисертација**

1. Mohamed Mohamed Abudabbus“Electrochemical synthesis and characterization of poly(vinyl alcohol)nanocomposites with silver nanoparticles” ТМФ, Београд, 12.03.2018. (*Прилог А*)

- Одлуком Наставно-научног већа Технолошко-металуршког факултета Универзитета у Београду бр. 35/380 од 26.10.2017. год., др Ана Јанковић је именована за члана Комисије за оцену и одбрану докторске дисертације кандидата Mohamed Mohamed Abudabbus под називом “Electrochemical synthesis and characterization of poly(vinyl alcohol)nanocomposites with silver nanoparticles”. Из докторске дисертације са кандидатом је публикован 1 рад категорије М21а. (скенирани документ у Прилогу А)

2. Раде Суруџић “Електрохемијска синтеза и карактеризација нанокомпозита поливинил-алкохола, графена и наночестица сребра” ТМФ, Београд, 10.09.2018. (*Прилог А*)

- Одлуком Наставно-научног већа Технолошко-металуршког факултета Универзитета у Београду бр. 35/45 од 22.02.2018. год., др Ана Јанковић је именована за члана Комисије за оцену и одбрану докторске дисертације кандидата Радета Суруџића под називом “Електрохемијска синтеза и карактеризација нанокомпозита поливинил-алкохола, графена и наночестица сребра”. Из докторске дисертације са кандидатом је публикован

1 рад категорије М21а, 1 рад категорије М21 и рад категорије М23. (скенирани документ у Прилогу А)

Осим наведених, учешће др Ане Јанковић у изради докторске дисертације „Хидрогелови поливинил-алкохола и хитозана са електрохемијски синтетисаним наночестицама сребра за медицинске примене“ др Катарине Нешовић, докторске дисертације “Електрофоретско таложење и карактеризација хидроксиапатит/лигнин и сребро/хидроксиапатит/лигнин превлака на титану” др Сање Ераковић, завршног мастер рада “Електрохемијско добијање и карактеризација хидрогелова на бази поливинил алкохола са хитозаном, графеном и наночестицама сребра” мастер инж. Катарине Нешовић, дипломског рада “Електрофоретско таложење композитних превлака хидроксиапатит/графен и сребро/хидроксиапатит/графен на титану” дипл. инж. Јелене Марковић и завршног рада “Електрофоретско таложење биокомпозитних керамичких превлака хидроксиапатита и хитозана са сребром и гентамицином на титану за примене у медицини” дипл. инж. Иве Илић, се може видети из приложених захвалница (скенирани документи у Прилогу А). Из докторске дисертације др Сање Ераковић са кандидаткињом су публикована 3 рада категорије М21 и 1 рад категорије М23. Из докторске дисертације др Катарине Нешовић са кандидаткињом је публикован 1 рад категорије М21а, 2 рада категорије М21 и 1 рад категорије М51.

**Члан комисије одбрањеног мастер рада**

1. Марко Опсеница “Синтеза и карактеризација хидрогелова поливинил-алкохол/хитозан са гентамицином”, ТМФ, Београд, 23.09.2022. (*Прилог А*)

2. Мињa Дедић “Електрохемијско таложење композитних превлака”, ТМФ, Београд, 30.09.2022. (*Прилог А*)

3. Нина Вуковић “Биокерамичке превлаке хидроксиапатита, хитозана и поливинил-алкохола са гентамицином за медицинске примене”, ТМФ, Београд, 30.09.2022. (*Прилог А*)

Др Ана Јанковић била је члан Комисије за избор у научно звање следећих кандидата.

- Одлуком Наставно-научног већа Технолошко-металуршког факултета Универзитета у Београду бр. 35/354 од 18.09.2015. год., др Ана Јанковић је именована за члана Комисије за подношење извештаја – реферата о испуњености услова за избор у истраживачко звање – НАУЧНИ САРАДНИК за др. Ивану Јевремовић, истраживача сарадника. (скенирани документ у Прилогу А)
- Одлуком Наставно-научног већа Технолошко-металуршког факултета Универзитета у Београду бр. 35/449 од 26.12.2013. год., др Ана Јанковић је именована за члана Комисије за подношење извештаја – реферата о испуњености услова за избор у истраживачко звање – НАУЧНИ САРАДНИК за др. Сању Ераковић, истраживача сарадника. (скенирани документ у Прилогу А)

Током реализације научних пројеката кандидаткиња је активно учествовала у реализацији научне сарадње Технолошко-металуршког факултета са другим институцијама у земљи и иностранству.

- Посебно је значајна научна сарадња са Département des sciences du bois et de la forêt, Université Laval, Québec, Canada у оквиру које су објављена три рада ранга М21 (3М21), објављен рад у међународном часопису (1М23), као и сарадња са NILPRP-The Laser-Surface-Plasma Interactions Laboratory, National Institute for Laser, Plasma, and Radiation Physics у Букурешту, Румунија, у оквиру које су остварена три студијска боравка. Као

резултат из ове области истраживања објављен је један рад у врхунском међународном часопису (1М21) и један рад у истакнутом међународном часопису (1М22). Од 2013. године започета је сарадња са лабораторијом Prof. Kyong Yop Rhee, Department of Mechanical Engineering, Kyung Hee University, Сеул, Јужна Кореја. Ова сарадња је веома плодна и резултирала је великим бројем публикованих радова и то 4 рада у међународним часописима изузетних вредности (4М21а), 8 радова у врхунским међународним часописима (8М21), 2 рада у истакнутим међународним часописима (2М22), 2 рада у међународним часописима (2М23), као и једног рада у националном часопису међународног значаја (1М24) и једног рада у врхунском часопису националног значаја (1М51). Од посебног је значаја утицај и искуство које је др Ана Јанковић пренела на млађе сараднике у реализацији, презентовању и публиковању научних резултата.

- Др Ана Јанковић била је члан Организационог одбора First International Conference on Processing, characterisation and application of nanostructured materials and nanotechnology (NanoBelgrade 2012), Belgrade, Serbia, 2012. Кандидаткиња је учествовала и у организацији COST 7th MC meeting, S&T and Focus Group meetings одржаног у Београду, од 26. фебруара до 2. марта 2018. године, скенирани документ у (Прилог А).

### 5.3. Квалитет научних резултата

#### 5.3.1. *Утицајност, позитивна цитираност, углед и утицајност публикација у којима су кандидатови радови објављени*

- У свом досадашњем научно-истраживачком раду др Ана Јанковић је након последњег избора у звање објавила **2** рада у међународним часописима изузетних вредности **(2М21а), 5** радова у врхунским међународним часописима (**5М21**), 1 рад у истакнутом међународном часопису **(1М22), 1** рад у међународном часопису **(1М23),** 1 рад у националном часопису међународног значаја (**1М24)** и 1 рад у врхунском часопису националног значаја **(1М51**.
- Укупна цитираност кандидаткиње износи **1134**, односно **1058** без аутоцитата (април 2023.), извор: **Scopus**. Према истој индексној бази **Хиршов индекс је 18**. Позитивна цитираност радова кандидаткиње указује на актуелност, утицајност и углед објављених радова.

Радови др Ана Јанковић публиковани су у међународним часописима ранга М21а, М21, М22 и М23, као и у националном часопису међународног ранга М24, од којих треба истаћи следеће часописе:

- Рад др Ане Јанковић објављен у ***J Alloy Comp.***(Materials Science, Multidisciplinary, 58/271, IF (2015) = 3,014), на коме је кандидаткиња први аутор цитиран је **157** пута (без аутоцитата), укључујући и 10 поглавља у у књигама, као и цитате у ***Ceramics International*** (Materials Science, Ceramics, 3/29, IF (2021) = 5.532), ***J Alloy Comp.***(Materials Science, Multidisciplinary, 5/79, IF (2021) = 6,371), ***Surface And Coatings Technology.***(Materials Science, Coatings & Films, 5/20, IF (2021) = 4.865 и многим другим.
- Рад др Ане Јанковић објављен у врхунском међународном часопису ***Biochemistry-US*** цитиран је **112** пута, углавном у међународним часописима изузетних вредности, укључујући и цитат у часопису ***Science*** (Multidisciplinary Sciences (2/56), IF(2021)= 63.832, ISSN 1095-9203), ***Nat Struct Mol Biol*** (*Biochemistry & Molecular Biology* (8/290 IF(2021)=18.361), ***Biophysics*** (2/74), *Cell Biology* (12/181), IF(2011=12.712, ISSN 1545-9985) i ***Structure*** (*Biophysics* (8/74), ***Cell Biology*** (35/181), ***Biochemistry & Molecular Biology*** (38/290), IF(2011= 6.347, ISSN 1359-0278) и многим другим.
- Један рад је објављен ***Prog Org Coat*** (Materials Science, Coatings & Films, 3/18, IF (2015) = 2,632) на коме је кандидаткиња први аутор цитиран цитиран је **93** пута (без аутоцитата).
- Један рад је објављен ***J Phys Chem B*** (Chemistry, Physical, 32/134, IF (2011) = 3,696) и

цитиран је **80** пута (без аутоцитата).

- Др Ана Јанковић објавила је 3 рада у ***Compos Part B-Eng*** (Materials Science, Composites, 2/25, IF (2021) = 4,727), који су цитирани хронолошки редом **61, 44** и **4** пута (без аутоцитата).
- Три рада су објављена у ***J Ind Eng Chem*** (Chemistry, Multidisciplinary, 32/166, IF (2016) = 4.421), који су цитирани хронолошки редом **48, 33** и **22** пута (без аутоцитата).
- Један рад је објављен ***Appl Surf Sci*** (Materials Science, Coatings & Films, 2/17, IF (2014) = 2,711) и цитиран је **80** пута (без аутоцитата).
- Рад др Ане Јанковић објављен у врхунском међународном часопису ***ACS Biomater. Sci. Eng***. (Materials Science, Biomaterials, 8/32, IF (2018) = 4,511) и цитиран је **43** пута (без аутоцитата), а неки од цитата су у цитиран у међународним часописима изузетних вредности Progress in Materials Science (Materials Science, Multidisciplinary, 3/345, IF (2021) = 48.165) и Chemical Society Reviews (Chemistry, Multidisciplinary, 2/180, IF (2021) = 60.615)
- Рад објављен у врхунском међународном часопису ***Eur Polym J.*** (Polymer Science, 14/89, IF (2019) = 3.862) цитиран је **47** пута (без аутоцитата).

**5.3.2.** ***Ефективан број радова и број радова нормиран на основу броја коаутора, укупан број кандидатових радова, удео самосталних и коауторских радова у њему, кандидатов допринос у коауторским радовима***

- Др Ана Јанковић је у досадашњем научноистраживачком раду публиковала 79 библиографских јединица и то: 27 научних радова у утицајним међународним часописима и 34 саопштења на међународном нивоу, као и 18 саопштења на националном нивоу. Просечан број аутора по раду за укупно наведену библиографију износи 8,2, а за период после избора у претходно звање 7,6. Др Ана Јанковић је била први аутор на 2 рада у врхунском међународном часопису, 1 раду у истакнутом међународном часопису, 1 раду у међународном часопису, 3 саопштења на међународним скуповима и 5 саопштења на скуповима националног значаја. Др Ана Јанковић је била на месту последњег аутора на патенту регистрованом на националном нивоу, као и два пута други коаутор и четири пута трећи аутор на међународним изложбама где је добила награде (8М104).

  Већина радова реализована је кроз сарадњу са колегама из других института и факултета у Србији и иностранству, што показује отвореност за сарадњу и даје допринос мултидисциплинарном приступу у истраживању материјала на интернационалном и националном новоу. Истиче се сарадња са Kyung Hee University, Јужна Кореја и Институтом за онкологију Војводине.

***5.3.3. Степен самосталности у научноистраживачком раду и улога у реализацији радова у научним центрима у земљи и иностранству***

Др Ана Јанковић је током досадашњег научно-истраживачког рада показала висок степен самосталности у идејама, креирању и реализацији експеримената, обради резултата и писању научних радова, који се у највећем броју односе на физичко-хемијска и биолошка испитивања својстава материјала. Резултате својих истраживања је систематски анализирала, објаснила и публиковала у утицајним међународним часописима.

Са осталим члановима истраживачке групе којој припада са Технолошко-металуршком факултету и Иновационом центру Технолошко-металуршког факултета, допринела је раду и акредитацији Центра за нанотехнологије и функционалне материјале, као центра изузетних вредности.

Оствареним резултатима истраживања кандидаткиња је показала да има способност да самостално организује и реализује истраживања. Поменутим резултатима је допринела

реализацији међународних и домаћих пројеката на којима је учествовала, док је својим радовима допринела дефинисању нових праваца истраживања у оквиру истраживачке групе којој припада.

**Мишљење референата**

На основу изнетих података и анализе научних радова види се да је кандидаткиња др Ана Јанковић у свом досадашњем раду на научноистраживачком пољу пружила доказе савесног и афирмисаног научног радника и испуњава све услове за избор у звање **научног саветника** јер има:
- 10 публикованих радова из категорије М20 од тренутка избора у звање виши научни сарадник,
- један објављен патент, признат на националном нивоу (М92),
- 8 међународних награда (М104) – Куп иновација у Руској федерацији, Златну медаљу за иновације у Руској федерацији, Златну медаљу на Тесла фесту, Златну медаљу и две Сребрне медаље са ликом Николе Тесле у области нових технологија и 2 IUPAC-ове награде за постерску презентацију *(Прилог А)*.
- у току целокупног научног опуса, у периоду 2006-2023. године, радови кандидаткиње цитирани су 1134 пута , односно 1058 без аутоцитата (април 2023.), извор: Scopus. Према истој индексној бази Хиршов индекс је 18. Позитивна цитираност радова кандидаткиње указује на актуелност, утицајност и углед објављених радова.
- др Ана Јанковић тренутно је коментор једне докторске дисертације која је у току, а учествовала је у изради експерименталног дела, осмишљавању тока и тумачењу резултата докторских дисертација 4 кандидата. До сада је била члан комисије две одбрањене докторске дисертације. Била је и члан комисије три мастер тезе. Учествовала у изради више дипломских и завршних радова. Два пута је била члан комисије за подношење извештаја – реферата о испуњености услова за избор у научно звање – научни сарадник.

**Сумарни приказ досадашње научно-истраживачке активности**

| Категорија рада | Коефицијент Категорије | Број радова у категорији | | Збир | |
|---|---|---|---|---|---|
| | | укупно | после избора | укупно | после избора |
| **Рад у међународном часопису изузетних вредности (М21а)** | **7,14 - 10*** | **4** | **2** | **32,61** | **17,14** |
| **Рад у врхунском међународном часописима (М21)** | **3,64 - 8*** | **14** | **5** | **84,84** | **29,42** |
| **Рад у истакнутом међународном часопису (М22)** | **1,79 – 4,17*** | **3** | **1** | **9,08** | **3,12** |
| **Рад у међународном часопису (М23)** | **3** | **3** | **1** | **9** | **3** |
| **Рад у националном часопису међународног значаја (М24)** | **3** | **1** | **1** | **3** | **3** |
| **Саопштење са међународног скупа штампано у изводу (М34)** | **0,21 – 0,5*** | **34** | **19** | **15,59** | **9,50** |
| **Рад у врхунском часопису националног значаја (М51)** | **1.67** | **1** | **1** | **1,67** | **1,67** |
| **Саопштење са скупа националног значаја штампано у изводу (М64)** | **0,17– 0.2*** | **18** | **14** | **3,57** | **2,8** |
| **Одбрањена докторска дисертација (М70)** | **6** | **1** | **0** | **0** | **0** |
| **Патенти-регистрован патент на националном нивоу (92)** | **12** | **1** | **1** | **12** | **12** |
| **Награда на изложби (104)** | **2** | **8** | **5** | **16** | **10** |
| **Учешће на изложби (105)** | **1** | **3** | **2** | **3** | **2** |
| **Укупан коефицијент** | | | | **190,36** | **93,65** |

* Услед нормирања научних радова по броју коаутора по формули К/(1+0,2(н-7)), коефицијенти (К) за радове у категорији М21а (коефицијент категорије је 10) Ане Јанковић су редом: 7,14; 10; дајући збир од 17,14.
Коефицијенти (К) за радове у категорији М21 (коефицијент категорије је 8) Ане Јанковић су редом: 8; 5; 5,71; 5,71; 5; дајући збир од 29,42.
Коефицијент (К) за рад у категорији М22 (коефицијент категорије је 5) Ане Јанковић је 3,12.
Коефицијент (К) за рад у категорији М51 (коефицијент категорије је 2) Ане Јанковић је 1,67.

Услов за избор у звање научни саветник за техничко-технолошке и биотехничке науке, које прописује *Правилник о стицању истраживачких и научних звања "Службени гласник РС", бр. 159 од 30. децембра 2020, 14 од 20. фебруара 2023.*, је да кандидат има укупно најмање 70 поена који треба да припадају следећим категоријама:

| Диференцијални услов - од првог избора у претходно звање до избора у звање | Потребно је да кандидат има најмање 70 поена, који треба да припадају следећим категоријама: | Неопходно | Остварено |
|---|---|---|---|
| **Научни саветник** | Укупно | **70** | **93,65** |
| Обавезни (1) | M10+M20+M31+M32+M33+M41+M42+M51+M80+M90+M100 | **54** | **81,35** |
| Обавезни (2)* | M21+M22+M23+M81-83+M90-96+M101-103+M108 | **30** | **64,68** |
| | M21+M22+M23 | **15** | **52,68** |
| | M81-83+M90-96+M101-103+M108 | **5** | **12** |

*** Напомена:** За избор у научно звање научни саветник, у групацији "Обавезни (2)", кандидат мора да оствари најмање 15 поена у категоријама M21+M22+M23 и најмање 5 поена у категоријама M81-83+M90-96+M101-103+M108.

Кандидаткиња испуњава квантитативне услове за избор у звање научни саветник за техничко-технолошке и биотехничке науке, који су прописани наведеним Правилником.

**ЗАКЉУЧАК**

На основу детаљне анализе досадашњег научно-истраживачког рада и остварених резултата, др Ана Јанковић, дипл. инж. технологије, је показала изразиту склоност и способност за бављење научно-истраживачким радом и испуњава све квантитативне и квалитативне услове неопходне за стицање звања НАУЧНИ САВЕТНИК. Истраживања др Ана Јанковић усмерена су на електрохемијску синтезу и биолошку карактеризацију биоматеријала за примене у медицини као имплантати коштаног и меких ткива. Применом електрофоретског таложења успешно су по први пут добијене тро- и четворокомпонентне превлаке на титану из водене суспензије са инкорпорисаним антибиотиком у превлаци, чиме се обезбеђује висока локална концентрација антибактеријског агенса и представља једно од могућих решења против стварања биофилма у иницијалном периоду након пласирања имплантата. Истраживања су усмерена и на примену еколошки прихватљивог електрохемијског поступка синтезе наночестица сребра директно унутар полимерних матрица хидрогелова на бази поливинил-алкохола, хитозана и графена, чиме се избегава коришћење хемијских редукционих агенаса и постиже боља биокомпатибилност добијених материјала. Изврсност истраживања потврђена је великом цитираношћу објављених радова, регистрованим патентом из исте области и освојеним наградама.

Стога, са задовољством предлажемо Наставно-научном већу Технолошко-металуршког факултета у Београду да овај извештај прихвати и исти проследи одговарајућој комисији Министарства науке, технолошког развоја и иновација Републике Србије на коначно усвајање.

У Београду, 7. априла 2023.

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