НАУЧНОМ ВЕЋУ
ИНСТИТУТА ЗА МУЛТИДИСЦИПЛИНАРНА ИСТРАЖИВАЊА
УНИВЕРЗИТЕТА У БЕОГРАДУ

Одлуком Научног већа Института за мултидисциплинарна истраживања Универзитета у Београду, донетој на седници одржаној 10.02.2022. године, изабрани смо у Комисију за оцену научно-истраживачког рада и испуњености услова **др Драгосава Мутавџића**, научног сарадника Института за мултидисциплинарна истраживања Универзитета у Београду, за избор у научно звање **виши научни сарадник**.

На основу анализе научно-истраживачког рада кандидата и увида у приложену документацију др Драгосава Мутавџића, у складу са критеријумима Закона о науци и истраживањима („Службени гласник РС“, број 49/2019) и Правилника о стицању истраживачких и научних звања („Службени гласник РС“, број 159 од 30. децембра 2020. године), подносимо Научном већу следећи

ИЗВЕШТАЈ

1. БИОГРАФСКИ ПОДАЦИ

Драгосав Мутавџић је рођен је 15. септембра 1970. године у Новој Вароши. Средњу школу је завршио у Новој Вароши. На Хемијском факултету Универзитета у Београду је дипломирао 2003. године на Катедри за органску хемију, са оценом на дипломском раду 9 (девет) и просечном оценом у току студија 8,13. Магистарске студије на Економском факултету Универзитета у Београду, одсек Статистичка анализа, уписао је школске 2003/04. године. Положио је све испите предвиђене планом и програмом магистарских студија са просечном оценом 9,67 и 08.12.2010. године одбранио магистарску тезу под називом „Примена мултиваријационе факторске анализе у флуоресцентној спектроскопији“. Докторску дисертацију под насловом „Примена мултиваријационе анализе на спектроскопским подацима“ одбранио је 28.09.2016. при Већу за мултидисциплинарне студије Универзитета у Београду.

Од 01.04.2005. године запослен је као истраживач приправник на Институту за мултидисциплинарна истраживања Универзитета у Београду (раније, Центар за мултидисциплинарне студије). У звање истраживач-сарадник изабран је 29. септембра 2010. године. На седници одржаној 21.07.2017. године, Комисија за стицање научних звања донела је Одлуку о стицању научног звања научни сарадник др Драгосава Мутавџића, у области природно-математичких наука – биологија.

Током досадашњег истраживачког рада на Институту за мултидисциплинарна истраживања, учествовао је на пројекту број 1911 – „Ћелијски одговор на стрес код дрвећа изазван загађењем: Могућност примене у биомониторингу животне средине“ Министарства науке, и заштите животне средине Републике Србије (2005) и на пројекту број 143043 – „Испитивање нових биосензора за мониторинг и дијагностику биљака“ Министарства за науку и технолошки развој Републике Србије (2006–2010). У периоду од 2011–2019. учествовао је на пројекту 173017 – „Испитивање односа структура-функција у ћелијском зиду биљака и измене структуре зида ензимским инжењерингом“ Министарства за науку и технолошки развој Републике Србије, под руководством др Ксеније Радотић Хаџи Манић. Био је и учесник COST акције CA-1601 „Multi-modal

imaging of forensic science, Evidence-tools for forensic science" у периоду од 2017. до 2021. године.

Др Драгосав Мутавџић је ангажован као предавач на мастер студијама „Напредне анализе података" при Универзитету у Београду, на предметима: Модели статистичког учења и Увод у статистичко закључивање.

2. БИБЛИОГРАФИЈА

Др Драгосав Мутавџић је после избора у звање научни сарадник објавио 23 рада и то: четири рада у међународним часописима изузетних вредности – М21а, једанаест радова у врхунским међународним часописима – М21, три рада у истакнутим међународним часописима – М22 и пет радова у међународним часописима – М23.

2.1 Радови објављени пре избора у звање научни сарадник

2.1.1 Радови у међународним часописима изузетних вредности – М21а (4 × 10 = 40)

1. **Mutavdžić, D.**; Xu, J.; Thakur, G.; Triulzi, R.; Kasas, S.; Jeremić, M.; Leblanc, R.; Radotić, K. Determination of the Size of Quantum Dots by Fluorescence Spectroscopy. *Analyst* **2011**, *136*, 2391–6. (IF_{2010}=4,230, Chemistry, Analytical 8/73)

   ISSN: 0003-2654
   doi:10.1039/c0an00802h
   www.rsc.org/analyst

2. Algarra, M.; Campos, B.; Radotić, K.; **D. Mutavdžić**; Bandosz, T.; Jiménez-Jiménez, J.; Rodriguez-Castellón, E.; Da Silva, J.; Luminescent carbon nanoparticles: effects of chemical functionalization, and evaluation of Ag+ sensing propertie, *Journal of Materials Chemistry A* **2014**, *2*, 8342–51. (IF_{2014}=7,443, Energy and fuels 5/89)

   ISSN: 2050-7488
   doi: 10.1039/c4ta00264d
   https://pubs.rsc.org/en/content/articlelanding/2014/ta/c4ta00264d/unauth

3. Milić, S.; Bogdanović Pristov, J.; **Mutavdžić, D.**; Savić, A.; Spasić, M.; Spasojević, I. The Relationship of Physicochemical Properties to the Antioxidative Activity of Free Amino Acids in Fenton System. *Environ. Sci. Technol.* **2015**, *49*, 4245–54. (IF_{2015}=6,396, Engineering, Environmental 3/50)

   ISSN: 0013-936X
   https://doi.org/10.1021/es5053396
   https://pubs.acs.org/doi/abs/10.1021/es5053396

4. Algarra, M.; Radotić, K.; Kalauzi, A.; **Mutavdžić, D.**; Savić, A.; Jiménez-Jiménez, J.; Rodríguez-Castellón, E.; Silva, J. C. da; Guerrero-González, J. J. Fingerprint

Detection and Using Intercalated CdSe Nanoparticles on Non-Porous Surfaces. *Anal. Chim. Acta* **2014**, *812*, 228–35. (IF_{2014}=4,513, Chemistry, Analytical 5/74)

ISSN: 0003-2670
doi: 10.1016/j.aca.2014.01.015
https://www.sciencedirect.com/science/article/abs/pii/S0003267014000610

2.1.2 **Радови у врхунским међународним часописима – М21 (8 × 8 = 64)**

1. Campos, B. B.; Algarra, M.; Radotić, K.; **Mutavdžić, D.**; Rodríguez-Castellón, E.; Jiménez-Jiménez, J.; Alonso, B.; Casado, C. M.; Esteves da Silva, J. C. ZnS:Mn Nanoparticles Functionalized by PAMAM-OH Dendrimer Based Fluorescence Ratiometric Probe for Cadmium. *Talanta* **2015**, *134*, 317–24. (IF_{2015}=4,035, Chemistry, Analytical 9/75)

   ISSN: 0039-9140
   https://doi.org/10.1016/j.talanta.2014.10.010
   https://www.sciencedirect.com/science/article/abs/pii/S0039914014008376

2. Dragišić Maksimović, J.; Poledica, M.; **Mutavdžić, D.**; Mojović, M.; Radivojević, D.; Milivojević, J. Variation in Nutritional Quality and Chemical Composition of Fresh Strawberry Fruit: Combined Effect of Cultivar and Storage. *Plant Foods Hum Nutr* **2015**, *70*, 77–84. (IF_{2015}=2,416, Chemistry, Applied 16/71)

   ISSN: 0921-9668
   doi: 10.1007/s11130-014-0464-3
   https://pubmed.ncbi.nlm.nih.gov/25575487/

3. Radotić, K.; Roduit, C.; Simonović, J.; Hornitschek, P.; Fankhauser, C.; **Mutavdžić, D.**; Steinbach, G.; Dietler, G.; Kasas, S. Atomic Force Microscopy Stiffness Tomography on Living *Arabidopsis Thaliana* Cells Reveals the Mechanical Properties of Surface and Deep Cell-Wall Layers during Growth. *Biophys. J.* **2012**, *103*, 386–94. (IF_{2010}=3,668, Biophysics 17/72)

   ISSN: 0006-3495
   doi: 10.1016/j.bpj.2012.06.046
   https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3414883/

4. Spasić, S.; Nikolić, Lj.; **Mutavdžić, D.**; Saponjić, J. Independent Complexity Patterns in Single Neuron Activity Induced by Static Magnetic Field. *Comput Methods Programs Biomed* **2011**, *104*, 212–8. (IF_{2010}=1,516, Computer Science, Theory and Methods 14/99)

   ISSN: 0169-2607
   doi: 10.1016/j.cmpb.2011.07.006
   https://pubmed.ncbi.nlm.nih.gov/21820752/

5. Spasic, S.; Culic, M.; Grbic, G.; Martac, L.; Sekulic, S.; **Mutavdzic, D**. Spectral and Fractal Analysis of Cerebellar Activity after Single and Repeated Brain Injury. *Bull. Math. Biol.* **2008**, *70*, 1235–49. (IF_{2006}=1,720, Biology 19/64)

   ISSN: 0092-8240
   doi: 10.1007/s11538-008-9306-5
   https://pubmed.ncbi.nlm.nih.gov/18340496/

6. Kalauzi, A.; **Mutavdzić, D.**; Djikanović, D.; Radotić, K.; Jeremić, M. Application of Asymmetric Model in Analysis of Fluorescence Spectra of Biologically Important Molecules. *Journal of Fluorescence* **2007**, *17*, 319–29. (IF_{2006}=2,610, Chemistry, Analytical 15/68)

   ISSN: 1053-0509
   doi: 10.1007/s10895-007-0175-3
   https://link.springer.com/article/10.1007/s10895-007-0175-3

7. Marjanović, Ž.; Glišić, A.; **Mutavdžić, D.**; Saljnikov, E. Ecosystems supporting *Tuber magnatum* Pico production in Serbia experience specific soil environment seasonality that may facilitate truffle lifecycle completion. *Applied Soil Ecology* **2015**, *95*, 179–90. (IF_{2014}=2,67, Soil Science, 8/34)

   ISSN: 0929-1393
   doi: 10.1016/j.apsoil.2015.05.007

8. Mitrovic, A.; Donaldson L.; Djikanovic, D.; Bogdanovic-Pristov, J.; Simonovic, J.; **Mutavdzic, D.**; Kalauzi, A.; Maksimovic, V.; Nanayakkara, B.; Radotic, K. Analysis of static bending-induced compression wood formation in juvenile *Picea omorika* (Pančić) Purkynč. *Trees-Structure and function* **2015**, *29*, 1533–43. (IF_{2014}=1,869, Forestry 11/64)

   ISSN: 0931-1890
   doi: 10.1007/s00468-015-1234-z
   https://link.springer.com/article/10.1007/s00468-015-1234-z

2.1.3 **Радови у истакнутим међународним часописима – М22 (5 × 5 = 25)**

1. Marković, J. M.; Trišović, N. P.; **Mutavdžić, D**.; Radotić, K.; Juranić, I. O.; Drakulić, B. J.; Marinković, A. D. Solvatochromism of Symmetrical 2,6-Distyrylpyridines. An Experimental and Theoretical Study. *Spectrochim Acta A Mol Biomol Spectrosc* **2015**, *135*, 435–46. (IF_{2015}=2,653, Spectroscopy 13/43)

   ISSN: 1386-1425
   doi: 10.1016/j.saa.2014.07.023
   https://pubmed.ncbi.nlm.nih.gov/25108111/

2. Cukic, M.; Oommen, J.; **Mutavdzic, D**.; Jorgovanovic, N.; Ljubisavljevic, M. The Effect of Single-Pulse Transcranial Magnetic Stimulation and Peripheral Nerve

Stimulation on Complexity of EMG Signal: Fractal Analysis. *Exp Brain Res* **2013**, *228*, 97–104. (IF_{2011}=2,395, Neurosciences 147/244)

ISSN: 0014-4819
doi: 10.1007/s00221-013-3541-1
https://pubmed.ncbi.nlm.nih.gov/23652725/

3. Todorović, D.; Kalauzi, A.; Prolić, Z.; Jović, M.; **Mutavdzić, D**. A Method for Detecting the Effect of Magnetic Field on Activity Changes of Neuronal Populations of *Morimus funereus* (Coleoptera, Cerambycidae). *Bioelectromagnetics* **2007**, *28*, 238–41. (IF_{2007}=2,193, Biology 16/65)

ISSN: 0197-8462
doi: 10.1002/bem.20288
https://pubmed.ncbi.nlm.nih.gov/17203477/

4. Radotic, K.; Ducic, T.; **Mutavdzic, D**. Changes in Peroxidase Activity and Isoenzymes in Spruce Needles after Exposure to Different Concentrations of Cadmium. *Environ. Exp. Bot.* **2000**, *44*, 105–13. (IF_{2000}=0,873, Environmental Sciences 62/127)

ISSN: 0098-8472
doi: 10.1016/s0098-8472(00)00059-9
https://pubmed.ncbi.nlm.nih.gov/10996363/

5. Mirković, J.; Božić, B.; Mutavdžić, D.; Uščumlić, G.; Mijin, D. Solvent and structural effects on the spectral shifts of 5-(substituted phenylazo)-3-cyano-6-hydroxy-1-(2-hydroxyethyl)-4-methyl-2-pyridones *Chemical Physics Letters* **2014**, *615*, 62–8. (IF_{2012}=2,145, Chemistry, Physical 67/135)

ISSN: 0009-2614
doi: 10.1016/j.cplett.2014.09.063

2.1.4 **Радови у међународним часописима – М23 (3 × 3 = 9)**

1. Andrijevic, Lj.; Radotic, K.; Bogdanovic, J.; **Mutavdzic, D**.; Bogdanovic, G. Antiproliferative Effect of Synthetic Lignin against Human Breast Cancer and Normal Fetal Lung Cell Lines. Potency of Low Molecular Weight Fractions. *J BUON* **2008**, *13*, 241–4. (IF_{2008}=0,64, Oncology)

ISSN: 1107-0625
https://pubmed.ncbi.nlm.nih.gov/18555472/

2. Mitrović, A,; Maksimović, V.; **Mutavdžić, D**.; Bogdanovic Pristov, J. Total phenol content and total antioxidant activity drop during *Tacitus bellus* direct shoot organogenesis. *Russian Journal of Plant Physiology* **2015**, *62*, 700–5. (IF_{2014}=0,946, Plant Sciences 134/204)

ISSN: 1021-4437

doi: 10.1134/s102144371505012x
https://link.springer.com/article/10.1134/S102144371505012X

3. Spasic, S.; Nikolic, Lj.; **Mutavdzic, D**. Effect of a static magnetic field on the fractal complexity of bursting activity of the BR neuron in the snail detected by factor analysis. *Archives of Biological Sciences* **2011**, *63*, 177–83. (IF_{2014}=0,360, Biology 76/85)

ISSN: 0354-4664
doi: 10.2298/ABS1101177S
http://www.doiserbia.nb.rs/img/doi/0354-4664/2011/0354-46641101177S.pdf

2.1.5 **Одбрањена докторска дисертација – М71 (1 × 6 = 6 укупно)**

Мутавџић Д. (2016) „Примена мултиваријационе анализе на спектроскопским подацима", Универзитет у Београду.

2.1.6 **Одбрањена магистарска теза – М72 (1 × 3 = 3 укупно)**

Мутавџић Д. (2010) „Примена мултиваријационе факторске анализе у флуоресцентној спектроскопији", Економски факултет, Универзитет у Београду.

2.2 **Радови објављени после избора у звање научни сарадник**

2.2.1 **Радови у међународним часописима изузетних вредности – М21а (5,00+10,00+3,08+7,14=25,22)**

1. J. Simonović Radosavljević, J. Bogdanović Pristov, A. Lj. Mitrović, G. Steinbach, G. Mouille, S. Tufegdžić, V. Maksimović, **D. Mutavdžić**, D. Janošević, M. Vuković, G. Garab, K. Radotić. Parenchyma cell wall structure in twining stem of *Dioscorea balcanica*. *Cellulose* (2018) 24, 4653–69.
(IF_{2018}:3,917; Material Science, Paper and Wood 1/21) – **10 поена**
Према Правилнику, после нормирања рада са 12 аутора: 5,00 поена.

ISSN:0969-0239
https://doi.org/10.1007/s10570-017-1460-1
https://link.springer.com/article/10.1007/s10570-017-1460-1

2. D.M. Milosavljević, **D.R. Mutavdžić**, K. Radotić, J.M. Milivojević, V.M. Maksimović, J.J. Dragišić Maksimović. Phenolic Profiling of 12 Strawberry Cultivars Using Different Spectroscopic Methods. *J. Agric. Food Chem.* (2020) 68, 4346–54.
(IF_{2020}:5,279; Agriculture/Multidisciplinary 5/58) – **10 поена**
Према Правилнику, не нормира се (рад са 6 аутора): 10,00 поена.

ISSN:0021-8561
https://doi.org/10.1021/acs.jafc.9b07331
https://pubs.acs.org/doi/abs/10.1021/acs.jafc.9b07331

3. A. Lj. Mitrović, J. Simonović Radosavljević, M. Prokopijević, D. Spasojević, J. Kovačević, O. Prodanović, B. Todorović, B. Matović, M. Stanković, V. Maksimović, **D. Mutavdžić**, M. Skočić, M. Pešić, Lj. Prokić, K. Radotić. Cell wall response to UV radiation in needles of *Picea omorika*. *Plant Physiology and Biochemistry* (2021) 161, 176–90.
(IF_{2020}:4,270; Plant Sciences 33/235) – **10 поена**
Према Правилнику, после нормирања рада са 15 аутора: 3,08 поена.

ISSN: 0981-9428
https://doi.org/10.1016/j.plaphy.2021.02.007
https://www.sciencedirect.com/science/article/pii/S0981942821000681?via%3Dihub

4. J. Jovanović, J. Ćirković, A. Radojković, **D. Mutavdžić**, G. Tanasijević, K. Joksimović, G. Bakić, G. Branković, Z. Branković. Chitosan and pectin-based films and coatings with active components for application in antimicrobial food packaging. *Progress in Organic Coatings* (2021) 158, 106349.
(IF_{2020}:5,161; Material Sciences, Coatings and Films 2/21) – **10 поена**
Према Правилнику, после нормирања рада са 9 аутора: 7,14 поена.

ISSN: 0300-9440
https://doi.org/10.1016/j.porgcoat.2021.106349
https://www.sciencedirect.com/science/article/pii/S0300944021002204?via%3Dihub

2.2.2 **Радови у врхунским међународним часописима – М21**
(3×5+2×5,71+2×6,67+4×8 = 71,76)

1. P. Milovanovic, D. Hrncic, K. Radotic, M. Stankovic, **D. Mutavdzic**, D. Djonic, A. Rasic-Markovic, D. Djuric, O. Stanojlovic, M. Djuric. Moderate hyperhomocysteinemia induced by short-term dietary methionine overload alters bone microarchitecture and collagen features during growth. *Life Sci.* (2017) 191, 9–16.
(IF_{2017}:3,234; Pharmacology and pharmacy 107/261) – **8,00 поена**
Према Правилнику, после нормирања рада са 10 аутора: 5,00 поена.

ISSN: 0024-3205
https://doi.org/10.1016/j.lfs.2017.10.008
ttps://www.sciencedirect.com/science/article/abs/pii/S002432051730512X?via%3Dihub

2. A. Nedzved, A. Lj. Mitrović, A. Savić, **D. Mutavdžić**, J.S. Radosavljević, J.B. Pristov, G. Steinbach, G. Garab, V. Starovoytov, K. Radotić. Automatic image processing morphometric method for the analysis of tracheid double wall thickness tested on juvenile *Picea omorika* trees exposed to static bending. *Trees - Struct. Funct.* (2018) 32, 1347–56.
(IF_{2016}:1,842; Forestry 15/64) – **8,00 поена**
Према Правилнику, после нормирања рада са 10 аутора: 5,00 поена.

ISSN: 0931-1890
https://doi.org/10.1007/s00468-018-1716-x
https://link.springer.com/article/10.1007%2Fs00468-018-1716-x

3. M. Algarra, A. González-Calabuig, K. Radotić, **D. Mutavdzic**, C.O. Ania, J.M. Lázaro-Martínez, J. Jiménez-Jiménez, E. Rodríguez-Castellón, M. del Valle. Enhanced electrochemical response of carbon quantum dot modified electrodes. *Talanta.* (2018) 178, 679–85.
(IF_{2018}:4,916; Chemistry, Analytical 11/84) – **8,00 поена**
Према Правилнику, после нормирања рада са 9 аутора: 5,71 поена.

ISSN: 0039-9140
https://doi.org/10.1016/j.talanta.2017.09.082
https://www.sciencedirect.com/science/article/abs/pii/S0039914017310238?via%3Dihub

4. Milenkovic, M. Algarra, C. Alcoholado, M. Cifuentes, J.M. Lázaro-Martínez, E. Rodriguez-Castellón, **D. Mutavdžić**, K. Radotić, T.J. Bandosz. Fingerprint imaging using N-doped carbon dots. *Carbon* (2019) 144, 791–7.
(IF_{2019}:8,821; Chemistry, Physical 26/159) – **8,00 поена**
Према правилнику, после нормирања рада са 9 аутора: 5,71 поена.

ISSN: 0008-6223
https://doi.org/10.1016/j.carbon.2018.12.102.
https://www.sciencedirect.com/science/article/abs/pii/S0008622318312429

5. M. Algarra, D. Bartolić, K. Radotić, **D. Mutavdžić**, M.S. Pino-González, E. Rodríguez-Castellón, J.M. Lázaro-Martínez, J.J. Guerrero-González, J.C. Esteves da Silva, J. Jiménez-Jiménez. P-doped carbon nano-powders for fingerprint imaging. *Talanta* (2019) 194, 150–7.
(IF_{2019}:5,339; Chemistry, Analytical 11/86) – **8,00 поена**
Према Правилнику, после нормирања рада са 10 аутора: 5,00 поена.

ISSN: 0039-9140
https://doi.org/10.1016/j.talanta.2018.10.033
https://www.sciencedirect.com/science/article/abs/pii/S0039914018310543?via%3Dihub

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(IF_{2020}:3,599; Optics 24/99) – **8,00 поена**
Према Правилнику, не нормира се (рад са 7 аутора): 8,00 поена.

ISSN: 0022-2313
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Према Правилнику, не нормира се (рад са 7 аутора): 8,00 поена.

ISSN:2075-4701
https://doi.org/10.3390/met11091384
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(IF_{2020}:5,268; Biophysics 11/71) – **8,00 поена**
Према Правилнику, после нормирања рада са 8 аутора: 6,67 поена.

ISSN: 0927-7765
https://doi.org/10.1016/j.colsurfb.2021.111828
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(IF_{2020}:3,935; Plant Sciences 47/235) – **8,00 поена**
Према Правилнику, не нормира се (рад са 7 аутора): 8,00 поена.

ISSN: 2223-7747
https://doi.org/10.3390/plants10112308
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(IF_{2020}:3,639; Agriculture, Multidisciplinary 8/58) – **8,00 поена**
Према Правилнику, после нормирања рада са 8 аутора: 6,67 поена.

ISSN: 0022-5142
https://doi.org/10.1002/jsfa.11591
https://onlinelibrary.wiley.com/doi/abs/10.1002/jsfa.11591

2.2.3 **Рад у истакнутом међународном часопису М22 (2×5,00+3,12 = 13,12)**

1. B.B. Campos, **D. Mutavdžić**, M. Stanković, Ќ. Radotić, J.M. Lázaro-Martínez, J.C.G. Esteves da Silva, R. Contreras-Cáceres, M.S. Pino-González, E. Rodriguez-Castellón, M. Algarra. Thermo-responsive microgels based on encapsulated carbon quantum dots. *New J. Chem.* (2017) 41, 4835–42.
(IF$_{2015}$:3,277; Chemistry, Multidisciplinary 50/163) – **5,00 поена**
Према Правилнику, после нормирања рада са 10 аутора: 3,12 поена.

   ISSN: 1144-0546
   https://doi.org/10.1039/c6nj03893j
   https://pubs.rsc.org/en/content/articlelanding/2017/NJ/C6NJ03893J

2. D. Bartolić, M. Stanković, **D. Mutavdžić**, S. Stanković, D. Jovanović, K. Radotić. Multivariate Curve Resolution - Alternate Least Square Analysis of Excitation-Emission Matrices for Maize Flour Contaminated with Aflatoxin B1. *J. Fluoresc.* (2018) 28, 729–33.
(IF$_{2017}$:1,665; Chemistry, Analytical 48/81) – **5,00 поена**
Према Правилнику, не нормира се (рад са 6 аутора): 5,00 поена.

   ISSN: 1053-0509
   https://doi.org/10.1007/s10895-018-2246-z
   https://link.springer.com/article/10.1007%2Fs10895-018-2246-z

3. J. Zakrzewska, A. Lj. Mitrović, **D. Mutavdžić**, T. Dučić, K. Radotić. Phosphorus homeostasis in Populus alba L. under excess phosphate conditions, assessed by 31P nuclear magnetic resonance spectroscopy and X-ray microfluorescence. *Environ. Sci. Pollut. Res.* (2020) 27, 3320–8.
(IF$_{2020}$:4,223; Environmental Sciences 91/274) – **5,00 поена**
Према Правилнику, не нормира се (рад са 5 аутора): 5,00 поена.

   ISSN: 0944-1344
   https://doi.org/10.1007/s11356-019-07200-9
   https://link.springer.com/article/10.1007%2Fs11356-019-07200-9

2.2.3 **Рад у међународном часопису М23 (5×3 = 15)**

1. D.V. Milojkov, V.D. Stanic, S.D. Dimovic, **D.R. Mutavdžic**, V. Živkovic-Radovanovic, G.V. Janjic, K. Radotic. Effects of Ag^+ ion doping on UV radiation absorption and luminescence profiles of fluorapatite nanomaterials obtained by neutralization method. *Acta Phys. Pol. A.* (2019) 136, 86–91.
(IF$_{2017}$:0,857; Physics, Multidisciplinary 58/78) – **3,00 поена**
Према Правилнику, не нормира се (рад са 7 аутора): 3,00 поена.

   ISSN: 0587-4246

https://doi.org/10.12693/APhysPolA.136.86
http://przyrbwn.icm.edu.pl/APP/PDF/136/app136z1p13.pdf

2. M. Stanković, D. Bartolić, B. Šikoparija, D. Spasojević, **D. Mutavdžić**, M. Natić, K. Radotić, Variability Estimation of the Protein and Phenol Total Content in Honey Using Front Face Fluorescence Spectroscopy Coupled with MCR–ALS Analysis. *J. Appl. Spectrosc.* (2019) 86, 256–63.
(IF_{2019}:0,71; Spectroscopy 36/42) – **3,00 поена**
Према Правилнику, не нормира се (рад са 7 аутора): 3,00 поена.

ISSN: 0021-9037
https://doi.org/10.1007/s10812-019-00809-1
https://link.springer.com/article/10.1007%2Fs10812-019-00809-1

3. V. Miladinovic, S. Kolasinac, I. Pecinar, B. Kiprovski, D. **Mutavdzic**, V. Ugrenovic, Z. Dajic-Stevanovic. Effects of genotype and bradyrhizobium inoculation on morphological traits, grain yield and protein content of soybean varieties. *Genetika* (2021) 53(2), 911–25.
(IF_{2020}:0,761; Agronomy 76/91) – **3,00 поена**
Према Правилнику, не нормира се (рад са 7 аутора): 3,00 поена.

ISSN: 0534-0012
https://doi.org/10.2298/GENSR2102727L
http://www.doiserbia.nb.rs/img/doi/0534-0012/2021/0534-00122102911M.pdf

4. S. Milosavljević, M. Jadranin, M. Mladenović, V. Tešević, N. Menković, **D. Mutavdžić**, G. Krstić. Physichochemical parameters as indicators of the authenticity of monofloral honey from the territory of the Republic of Serbia. *Macedonian Journal of Chemistry and Chemical Engineering* (2021) 40, 57–67.
(IF_{2019}:0,829; Chemistry, Multidisciplinary 150/177) – **3,00 поена**
Према Правилнику, не нормира се (рад са 7 аутора): 3,00 поена.

ISSN: 1857-5552
doi: 10.20450/mjcce.2021.2186
https://www.mjcce.org.mk/index.php/MJCCE/article/view/2186

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(IF_{2020}:1,041; Agronomy 66/91) – **3,00 поена**
Према Правилнику, не нормира се (рад са 7 аутора): 3,00 поена.

ISSN: 2079-052X
doi: 10.9755/ejfa.2021.v33.i2.2354
http://www.ejfa.me/

3. АНАЛИЗА РАДОВА

Parenchyma cell wall structure in twining stem of Dioscorea balcanica

Анатомске адаптације лијана укључује структурне промене ћелијских зидова различитих ткива. Међутим, допринос ћелија паренхима увијању стабла углавном је непознат. Циљ овог истраживања био је да се утврде промене у структури и хемијском саставу ћелијских зидова паренхима које су у корелацији са процесом увијања стабла монокотиле лијане *D. balcanica*. У ту сврху је сакупљена серија FTIR спектара који су анализирани одговарајућим статистичким методама (једнофакторска АНОВА по потпуно случајном плану и балансираним дизајном, Т тест за два независна узорка, Данканов post-hoc тест). Једнофакторска АНОВА је коришћена за тестирање значајности разлика између FTIR спектара 1., 3. и 7. интернодија истовремено и посебно за сваки таласни број. Студентов Т тест је коришћен за поређење парова интернодија (3. vs 1., 7. vs 3. и 7. vs 1.), упоређивањем просечних интензитета FTIR спектара за сваки појединачни таласни број. Степен варијација FTIR сигнала између парова интернодија је одређен као однос између збира квадрата варијације између интернодија и збира квадрата укупне варијације, за сваки таласни број. За поређење садржаја лигнина, укупних фенола (везаних у ћелијском зиду), фенола ћелијског зида, као и за тестирање значајности разлика положаја максимума Гаусових кривих између интернодија стабла, коришћена је једнофакторска АНОВА, док је Данканов тест коришћен за накнадна поређења. Резултати рада су показали да анатомска адаптација стабла монокотиле повијуше *D. balcanica* укључује структурне промене ћелијских зидова паренхима.

Phenolic Profiling of 12 Strawberry Cultivars Using Different Spectroscopic Methods

У овом раду су профилисана фенолна једињења 12 сорти јагода коришћењем спектрофотометрије, спектрофлуорометрије и високо ефикасне течне хроматографије-масене спектрометрије, заједно са мултиваријационом регресионом анализом. Процењени су укупан садржај фенола, укупан садржај антоцијанина, укупни антиоксидативни капацитет (TPC, TACI и TAC, редом) и концентрације појединачних фенола, а мултиваријациона статистика је коришћена да би се идентификовале најперспективније сорте на основу садржај фенола. Према Анализи главних компоненти, TPC је био у јакој корелацији са TAC ($r = 0{,}81$), што је указивало на његов значај у укупној антиоксидативној активности. Сорте „Joly", „Laetitia" и „Asia" издвајале су се од осталих као најбогатије антоцијанима, скоро свим флавоноидима и фенолним киселинама. Метода Мултиваријационе резолуције кривих - наизменични најмањи квадрати екстраховала је два главна типа флуорофора који су приписани антоцијанинима и фенолима, у којима су емисиони спектрални односи такође показали највеће вредности код реферисаних сорти. Здравствсни бенефити ових сорти могли би бити основа за њихову препоруку потрошачима.

Cell wall response to UV radiation in needles of Picea omorika

Ћелијски зидови су једно од места деловања спољашњих стресора. Јувенилна стабла *P. omorika* третирана су 21 дан високим дозама UV-B или 7 дана UV-C зрачењем у отвореним коморама. Користећи спектроскопске и биохемијске технике, показано је да одговор на UV зрачење укључује бројне модификације у структури ћелијског зида чстина: релативни садржај ксилана, ксилоглукана, лигнина, смањење целулозе;

кристаличност целулозе је промењена; повећан је принос мономера лигнина са јачом конекцијом C=C у бочном ланцу са прстеном; дошло је до прерасподеле интер- и интра-полимерних водоничних веза.

Средње вредности активности ензима, садржај фенола и лигнина у третманима су смештени у матрицу, где су редови одговарали третманима, а колоне посматраним параметрима. Ова матрица је била инпут за Анализу главних компоненти (Principal component analysis, PCA) која се убраја у једну од најпопуларнијих мултиваријационих метода, примењивану у широком спектру истраживачких области, у распону од физике до геномике и маркетинга. Ова метода је пројектовала третмане на простор ниже димензионалности, са циљем да се из матрице података екстрахују важне информације. У овом раду PCA је коришћена за проучавање односа између активности ензима, садржаја фенола и лигнина у вези са третманима. Визуелизација ових односа, као и сличности међу ефектима UV-B и UV-C зрачења, постигнута је конструисањем биплота. Биплот је конструисан са прве две главне компоненте. Како оне нису апсорбовале довољан проценат варијансе, конструисани су додатни биплотови, PC1 vs PC3 и PC2 vs PC3. Такође су проверене статистичке значајности разлика између параметара приказаних на биплотовима. Анализа главних компоненти је такође спроведена у циљу процене односа између ензима пероксидаза и полифенол оксидаза, као и појединачних фенола у иглицама – везаних у ћелијском зиду и слободних. За две групе параметара, групу појединачних фенола везаних у ћелијском зиду и групу слободних фенола, кластерграми су коришћени за проучавање међукорелација фенола унутар ових група, као и сличности између ефеката UV-B и UV-C зрачења на ове феноле. Помоћу кластерграма су визуелизовани високодимензионални подаци кроз хијерархијско груписање редова и колона матрице података и конструисани су дендрограми, како за феноле, тако и за третмане. За меру сличности фенола коришћен је коефицијент корелације, док је еуклидско растојање коришћено као мера сличности третмана. Груписање је извршено на стандардизованим подацима (вредности су сведене на нулти просек и јединичну девијацију). За процену разлика између садржаја cPHA одвојених на гелу коришћен је Студентов т-тест за један узорак. Двофакторска АНОВА је коришћена за испитивање утицаја третмана (врста УВ зрачења – контрола, UV-B и UV-C), као и утицаја опоравка на посматране параметре. За накнадна поређења коришћен је Данканов тест. Једнофакторска АНОВА је употребљена за испитивање утицаја третмана (врста UV зрачења – контрола, UV-B и UV-C) на однос максимума емисије флуоресцентног зрачења. Студија је пружила доказе да код четинара одговор ћелијског зида четина на UV-B и UV-C зрачење укључује биохемијске и структурне модификације.

Moderate hyperhomocysteinemia induced by short-term dietary methionine overload alters bone microarchitecture and collagen features during growth

У овом раду спроведена је експериментална студија на младим мушким пацовима, која је показала да је краткотрајна умерена хиперхомоцистеинемија утицала на структурни интегритет кости током раста и развоја. Хиперхомоцистеинемија је утицала и на трабекуларне и на кортикалне компартменте, али је микроархитектура трабекуларне кости била посебно погоршана. Штавише, на нивоу коштаног матрикса, хиперхомоцистеинемија је била повезана са знацима који указују на прекид колагенских унакрсних веза. Очигледно, кроз обе коштане архитектуре и ефекте матрикса, умерено повећана концентрација хомоцистеина је утицала и на развој кости и нарушавање квалитета костију. Разумевање скелетних ефеката хиперхомоцистеинемија изазване исхраном је од суштинског значаја за разумевање њеног значаја као модификујућег фактора ризика за остеопорозу, као и за побољшање превенције и програма лечења за

очување или поновно успостављање здравља костију. С обзиром на то да је губитак коштане масе у старости унапред одређен коштаном масом стеченом током раста скелета, педијатријско доба може бити време за превенцију остеопорозе одраслих. Резултати ове студије су делом изведени и математичко-статистичком анализом флуоресцентних спектара. Инпут за ову анализу су биле ексцитационо-емисионе матрице, снимљене на узорцима костију контролне и хиперхомоцистеинемичне животиње. Свака матрица је анализирана коришћењем мултиваријационе резолуције кривих-метода наизменичних најмањих квадрата, која је издвојила број компоненти, као и њихове емисионе профиле. Тродимензиони приказ емисионих спектара костију контролне групе и хиперхомоцистеинемичне групе открио је да је спектар колагена садржао два пика, при чему је пик на већој таласној дужини већи у односу на пик на мањој таласној дужини. У експерименталној групи је дошло до повећања магнитуде пика на мањој таласној дужини у односу на пик на већој таласној дужини. Примена мултиваријационе резолуције кривих на ексцитационо-емисиону матрицу контролне групе дала је као резултат емисионе профиле спектралних компоненти, на позицијама око 400–405 nm и на 435 nm. Кост захваћена хиперхомоцистеинемијом показала је померање пикова ка нижим таласним дужинама: 390–395 nm и 425–435 nm. Додатни пик (видљив као „раме" у сировим спектрима) се такође појавио на нижој таласној дужини у спектрима из експерименталне групе (350–365 nm).

Automatic image processing morphometric method for the analysis of tracheid double wall thickness tested on juvenile Picea omorika trees exposed to static bending

У овом раду представљена је морфометријска метода за аутоматску обраду слике у анализи дебљине ћелијског зида трахеида. Тестиране су перформансе методе на снимцима добијеним ласерском конфокалном скенирајућом микроскопијом попречних пресека јувенилних стабала *P. omorika* који су били изложени дуготрајном статичком савијању. Метода има много предности са малим бројем захтева. Омогућава брзе аутоматске анализе узорака дрвета и независна је од употребљене микроскопске методе. Квалитет дигиталних слика није ограничавајући јер је за анализу важан само контраст између ћелијског лумена и ћелијског зида.

Овај алгоритам за обраду слике, у комбинацији са статистичком анализом, може бити користан алат у процени и градацији промене дебљине ћелијског зида трахеида као одговор на утицај животне средине током растења и развића. Како радијални и тангенцијални зидови трахеида могу значајно да варирају у погледу дебљине ћелијског зида, потенцијал ове аутоматске морфометријске методе за процену дистрибуције дебљине двоструког зида посебно за различите регионе ћелијског зида трахеиде (радијални зидови, тангенцијални зидови и углови ћелија) је драгоцен.

Enhanced electrochemical response of carbon quantum dot modified electrodes

У овом раду електрода од стакластог угљеника (GCE) је површински модификована угљеничним квантним тачкама (CQDs) и примењена за ефикасно побољшање електрохемијских сигнала приликом одређивања допамина и мокраћне киселине. CQDs су биле припремљене од графита зеленом модификацијом Хамерсове методе. Квантне честице су окарактерисане FTIR-ATR, XPS, NMR, флуоресцентном и раманском спектроскопијом. Ексцитационо-емисиона матрица CQDs је анализирана Мултиваријационом резолуцијом кривих која је екстраховала број компоненти, као и њихове емисионе профиле. Квантне тачке су коришћене за функционализацију GC електроде без икаквог везивног реагенса; допамин и мокраћна киселина коришћени су

као тест аналити. Електрохемијска детекција оба једињења показала је значајно повећање пика у CQDs-GCE у поређењу са голим стакластим угљеником. CQDs-GCE су показале скоро 10 пута већу осетљивост од голих GC електрода, што је резултирало нижим лимитом детекције за обе анализиране врсте. Показало се да су синтетизовани CQDs добар избор за функционализацију GC електроде, како би се на једноставан начин добили побољшани електрохемијски одговори модел аналита.

Fingerprint imaging using N-doped carbon dots

У овом раду N-допиране угљеничне тачке (N-CDs) добијене хидротермалном методом коришћене су за детекцију отисака прстију помоћу флуоресцентне спектроскопије. Синтетизоване CDs су показале емисију на 495 nm, што је било везано за њихова структурна и хемијска својства. Уколико се користе као медиј за откривање отиска прста, могу се добити обрасци јединствених карактеристика. Резултати хемијске анализе су сугерисали да су површинске функционалне групе N-CDs углавном амидне, одговорне за интеракције са биомолекулима и те интеракције су довеле до специфичне флуоресценције узорака. Мултиваријациона резолуција кривих-наизменични најмањи квадрати је коришћена у анализи ексцитационо-емисионе матрице и детектовала је три главне компоненте које су потицале од различитих флуорофора (структурних образаца) на површини N-CDs наночестица. Показало се да су ове наночестице нетоксичне када се користе у концентрацији преко 0,01 mg/mL. Ова карактеристика, заједно са квалитетом слике отиска прста, сугерише да се ови угљенични наноматеријали могу успешно користити у форензичким наукама. Добијени резултати су потврђени научним протоколом полицијског аутоматизованог система за идентификацију отиска прста (AFIS) на основу биометријске идентификације.

P-doped carbon nano-powders for fingerprint imaging

У овом раду су развијени чврсти флуоресцентни наноматеријали од угљеника, који су синтетизовани инкорпорацијом фосфора како би се формирали P-CDs реакцијом P_2O_5 са 1,3 дихидроксиацетоном. Добијене су флуоресцентне наночестице, просечне величине 230 nm, без додатног уноса енергије или спољашњег грејања. Површинска функционализација и механизам реакције су откривени помоћу: ATR, ss-NMR, XPS и флуоресцентне спектроскопије. Површинска функционализација је утицала на одлична емисиона својства, при чему је анализа ексцитационо-емисионе матрице показала присуство три врсте флуорофора које могу бити повезане са површинским групама базираним на кисеонику. Максимум емисије је постигнут на 495 nm, при ексцитацији на 385 nm. У раду је демонстрирана робустност ових наночестица за снимање отисака прстију као обећавајућа алтернатива за потенцијалне примене у потребама безбедносног скрининга. На пример, снимљене слике на различитим површинама, као што су екрани мобилних телефона, магнетне траке и металне површине кредитних картица и евро новчанице, које су трстиранс добијеним нано-праховима, омогућавају позитивна поклапања, потврђујући да експериментални резултати илуструју ефикасност предложеног метода.

Fabrication and characterization of luminescent Pr3+ doped fluorapatite nanocrystals as bioimaging contrast agents

У овом раду је синтетисана нова врста нанокристала флуорапатита допираних празеодимијумом (FAP-Pr) са ексцитационо-емисионим профилима у видљивом делу спектра. Нови FAP-Pr нанокристали су имали одличну биокомпатибилност и ћелије су их могле успешно усвајати, што је показано коришћењем два различита модела ћелија

канцера (карцином плућа код људи A549 и карцином коже A431). Резултати широкопојасног и конфокалног флуоресцентног имиџинга су показали постојање луминесцентног сигнала из унутрашњости ћелија, што је била потврда да су нанокристали ушли у ћелију и позиционирали се у цитоплазми. Да би се ови нанокристали користили као контрастно средство у биолошком имиџингу и да би постали погодни за транслациона биомедицинска истраживања и/или клиничке примене, потребно је повећати интензитет њихове емисије у циљу лакше детекције. Материјал је обећавајући, тако да се неколико потенцијалних употреба може базирати на овом материјалу, укључујући детекцију, праћење, испоруку и терапијске апликације повезане са раком, као и мускулоскелетним болестима.

Estimation of carbon dots amelioration of copper toxicity in maize studied by synchrotron radiation-FTIR

Карбонске тачке (CD) су биокомпатибилне и нетоксичне наночестице са хемијским афинитетом према појединим тешким металима. Ова студија је имала за циљ да процени како карбонске тачке базиране на фолној киселини ублажавају ефекте токсичности бакра проучавањем интрацелуларних једињења и једињења ћелијског зида у корену и листовима кукуруза (*Zea mays* L.) после седмодневног третмана у хидропоници. Бакар је есенцијални микроелемент у биљкама, али његов повећан ниво, настао као резултат људских активности, може изазвати штетне ефекте. Такође је праћен утицај CD на концентрацију бакра у биљкама. Није било визуелних штетних ефеката на биљке. Сува тежина корена је повећана после третмана Cu/167CD, а сува тежина листова после оба третмана Cu/167CD и Cu/500CD у поређењу са контролом. Употребом синхротронске FTIR микро-спектроскопије у комбинацији са статистичком анализом и XPS-ом уочено је да је третман са Cu/167CD значајно смањио концентрацију бакра у корену и повећао суву масу корена. Већа концентрација CD-а примењена заједно са Cu повећала је штетне ефекте Cu у већини ткива, довела до смањења суве тежине корена и повећала TPC и TAA. Међутим, комбиновани третман Cu/500CD је ублажио штетне ефекте вишка Cu на полисахариде ћелијског зида у ксилему корена, и на полисахариде и протеине у флоему и мезофилу листа. На липиде је утицао третман Cu/500CD у епидермису корена и утицали су сви третмани у ксилему, флоему и мезофилу листа, показујући већу пропустљивост мембрана у спољашњем ткиву корена и унутрашњем ткиву листа. Међутим, примена CD није била ефикасна у ублажавању оксидативног стреса изазваног вишком Cu, како у корену тако и у листовима.

У свим осталим радовима у којима је био коаутор, др Драгосав Мутавџић је користио разне технике униваријационе и мултиваријационе статистике у анализи експериментално прикупљених података, њиховој визуелизацији, као и интерпретацији добијених резултата.

4. ЦИТИРАНОСТ

Прегледом Scopus базе утврђено је да су радови др Драгосава Мутавџића цитирани укупно 684 пута, од чега 657 пута без аутоцитата. Кандидатов Хиршов индекс је 13.

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4.1 Пет најзначајнијих научних остварења

Међу најзначајнијим научним остварењима др Драгосава Мутавџића, у периоду од последњег избора у научно звање, истиче се 5 истраживачких публикација у којима је кандидат радио на прикупљању спектралних података, њиховој математичко-статистичкој обради и визуелизацији екстрахованих резултата.

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5. J. Simonović Radosavljević, J. Bogdanović Pristov, A. Lj. Mitrović, G. Steinbach, G. Mouille, S. Tufegdžić, V. Maksimović, **D. Mutavdžić**, D. Janošević, M. Vuković, G. Garab, K. Radotić. Parenchyma cell wall structure in twining stem of *Dioscorea balcanica*. *Cellulose* (2018) 24, 4653–69. (**M21a**, IF_{2018}:3,917)

5. ОЦЕНА САМОСТАЛНОСТИ РАДА КАНДИДАТА

Др Драгосав Мутавџић је у својим радовима показао висок степен самосталности. Његов истраживачки рад фокусиран је на употребу напредних техника мултиваријационе анализе (нпр. Мултиваријациона резолуција кривих) у обради флуоресцентних, FTIR, XPS и других спектралних података. Сарађује са истраживачима из различитих научних дисциплина (биологија, биохемија, наука о материјалима, медицина, агротехничке науке и др.) у дефинисању њихових истраживачких хипотеза, дизајнирању експеримента, избору и конструкцији математичко-статистичких модела у анализирању експериментално прикупљених података и тумачењу добијених резултата. У његовом истраживачком раду присутна је мултидисциплинарност, као и сарадња са колегама из иностранства.

Др Драгосав Мутавџић је после избора у звање научни сарадник објавио четири рада у међународним часописима изузетних вредности – М21а, једанаест радова у врхунским међународним часописима – М21, три рада у истакнутим међународним часописима – М22 и пет радова у међународним часописима – М23.

6. КВАЛИТАТИВНИ ПОКАЗАТЕЉ НАУЧНОГ АНГАЖМАНА И ДОПРИНОС УНАПРЕЂЕЊУ НАУЧНОГ И ОБРАЗОВНОГ РАДА

Др Драгосав Мутавџић је учествовао на следећим домаћим научним пројектима:

Пројекат број 1911 – „Ћелијски одговор на стрес код дрвећа изазван загађењем: Могућност примене у биомониторингу животне средине“ Министарства науке, и заштите животне средине Републике Србије (2005),

Пројекат број 143043 – „Испитивања нових биосензора за мониторинг и дијагностику биљака“ Министарства за науку и технолошки развој Републике Србије (2006–2010),

Пројекат број 173017 – „Испитивање односа структура-функција у ћелијском зиду биљака и измене структуре зида ензимским инжењерингом“ Министарства просвете, науке и технолошког развоја Републике Србије (2011–2019),

Пројекат ИИИ – „Синтеза, процесуирање и карактеризација наноструктурних материјала за примену у енергетици, машинству, заштити животне средине и биомедицине-ПОДПРОЈЕКАТ: Студија и модификације структуре биљног ћелијског зида као основе нових материјала за нанотехнолошке примене“ Министарства просвете, науке и технолошког развоја Републике Србије (2011–2019).

Био је и учесник COST акције CA-1601 „Multi-modal imaging of forensic science, Evidence-tools for forensic science“, у периоду од 2017. до 2021. године.

Кандидат је активно учествовао у реализацији ових пројеката, дао пун допринос прикупљању, статистичкој обради и визуелизацији експерименталних података и показао склоност ка тимском раду.

7. КВАНТИТАТИВНА ОЦЕНА НАУЧНО-ИСТРАЖИВАЧКОГ РАДА

Квантитативни показатељи успешности научно-истраживачког рада др Драгосава Мутавџића приказани су у табелама 1 и 2.

Табела 1. Приказ укупног научног рада.

Приказ научних радова					
Ознака групе	**Врста резултата**	**Број радова**	**Вредност резултата**	**Укупно поена**	**Нормиран број поена**
M20	M21a	7	10	70	50,7
	M21	21	8	168	142,86
	M22	6	5	30	28,12
	M23	9	3	27	27
M30	M33	/	/	/	/
	M34	/	/	/	/
M60	M64	/	/	/	/
$M_{10} + M_{20} + M_{31} + M_{32} + M_{33} + M_{41} + M_{42}$ (обавезни ≥ 40)				**295**	**248,68**
$M_{11} + M_{12} + M_{21} + M_{22} + M_{23}$ (обавезни ≥ 30)				**295**	**248,68**
Укупно за све категорије				**295**	**248,68**

Табела 2. Приказ радова после избора у звања научни сарадник.

Приказ научних радова					
Ознака групе	**Врста резултата**	**Број радова**	**Вредност резултата**	**Укупно поена**	**Нормиран број поена**
M20	M21a	4	10	40	25,22
	M21	11	8	88	71,76
	M22	3	5	15	13,12
	M23	5	3	15	15
M30	M33	/	/	/	/
	M34	/	/	/	/
M60	M64	/	/	/	/
$M_{10} + M_{20} + M_{31} + M_{32} + M_{33} + M_{41} + M_{42}$ (обавезни ≥ 40)				**158**	**125,10**
$M_{11} + M_{12} + M_{21} + M_{22} + M_{23}$ (обавезни ≥ 30)				**158**	**125,10**
Укупно за све категорије (тражи се ≥ 50)				**158**	**125,10**

МИНИМАЛНИ КВАНТИТАТИВНИ ЗАХТЕВИ ЗА СТИЦАЊЕ ПОЈЕДИНАЧНИХ НАУЧНИХ ЗВАЊА

За природно-математичке и медицинске науке

Диференцијални услов за избор у звање	Потребно је да кандидат има најмање XX поена, који треба да припадају следећим категоријама	Неопходно	Остварено	Остварено после нормирања
Виши научни сарадник	Укупно	50	**158**	**125,10**
Обавезни (1)	M10+M20+M31+M32+M33+ M41+M42+M90	40	**158**	**125,10**
Обавезни (2)	M11+M12+M21+M22+M23	30	**158**	**125,10**

Збир импакт фактора радова др Драгосава Мутавџића износи 135,963, од тога 81,327 после избора у звање научни сарадник.

Из приложених табела се може видети да је др Драгосав Мутавџић после избора у звање научни сарадник остварио резултате у вредности од 158 поена, односно 125,10 поена после нормирања радова на број аутора према Правилнику о стицању истраживачких и научних звања.

8. РАЗВОЈ УСЛОВА ЗА НАУЧНИ РАД, ОБРАЗОВАЊЕ И ФОРМИРАЊЕ НАУЧНИХ КАДРОВА

8.1 Допринос развоју науке у земљи

Др Драгосав Мутавџић је дао допринос формирању научног подмлатка кроз различите активности: држање курсева из експерименталне статистике, консултације и помоћ приликом обраде експерименталних резултата у мастер радовима и докторским дисертацијама. Остварио је богату и плодну сарадњу са колегама са других факултета и института у земљи.

Члан је комисије за оцену урађене докторске дисертације Владимира Миладиновића, мастера заштите животне средине у пољопривреди, под називом „Утицај формирања азотофиксирајућих нодула на морфолошке особине, принос и квалитет семена соје“, одлуком Наставно-научног већа Универзитета у Београду – Пољопривредног факултета, од 24. новембра 2021. године.

Био је члан комисије за оцену научне заснованости теме докторске дисертације мастер инжењера пољопривреде Стефана Колашинца, под називом „Каротеноиди, њихов антиоксидативни капацитет и биолошка активност у одабраним сортама паприке и њиховим традиционалним производима“.

8.2 Друштвени и педагошки рад

Др Драгосав Мутавџић је ангажован као предавач на мастер студијама „Напредне анализе података“ при Универзитету у Београду, на предметима: Модели статистичког учења и Увод у статистичко закључивање. Држао је курсеве Статистичке анализе колегама са Института за мултидисциплинарна истраживања.

9. ЗАКЉУЧАК И ПРЕДЛОГ КОМИСИЈЕ

Разматрајући свеукупни научно-истраживачки рад др Драгосава Мутавџића, закључујемо да је он формиран научни радник који је нашао своје место у области хемометрије и остварио запажене резултате. Веома је важно напоменути да је др Драгосав Мутавџић први доктор наука при Већу за мултидисциплинарне студије Универзитета у Београду из области хемометрије. Истраживања др Драгосава Мутавџића су мултидисциплинарног карактера и отуда веома актуелна у широј области физиологије биљака, биохемије, медицине, агротехничких и других наука.

Такође треба истаћи његов допринос формирању научног подмлатка кроз различите активности: држање курсева из експерименталне статистике, консултације и помоћ приликом обраде експерименталних резултата у мастер радовима и докторским дисертацијама. Кандидат има изражену способност да објективно и критички оцењује

како своје, тако и резултате других аутора. Његова отвореност за сарадњу и изражена склоност ка тимском раду огледа се у богатој и плодној сарадњи са колегама са других факултета и института у земљи и иностранству.

Резултати рада др Драгосава Мутавџића, после избора у звање научни сарадник, објављени су у 23 публикације: четири рада у међународним часописима изузетних вредности – М21а, једанаест радова у врхунским међународним часописима – М21, три рада у истакнутим међународним часописима – М22 и пет радова у међународним часописима –М23. Укупна остварена вредност коефицијента М је 248,68 (125,10 од избора), укупан ИФ је 135,963 (81,327 од избора), а број цитата (без аутоцитата) је 657. Кандидатов Хиршов индекс је 13.

Резултати др Драгосава Мутавџића отворили су нове путеве ка фундаменталним и примењеним знањима. Подаци изнети у овом извештају показују да је научни допринос кандидата веома значајан и препознатљив у међународној научној јавности.

На основу свих наведених података, анализе и оцене научно-истраживачких резултата др Драгосава Мутавџића, Комисија сматра да је кандидат својим досадашњим радом испунио све услове који су прописани Законом о науци и истраживањима и Правилником о стицању истраживачких и научних звања за избор у научно звање виши научни сарадник и предлаже Научном већу Института за мултидисциплинарна истраживања Универзитета у Београду да прихвати овај Извештај и **подржи избор др Драгосава Мутавџића** у звање **виши научни сарадник.**

У Београду, 08. марта 2022. годинс

Комисија:

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технологију и металургију – Института од национално значаја за Републику Србију, члан Комисије