

НАУЧНОМ ВЕЋУ
ИНСТИТУТА ТЕХНИЧКИХ НАУКА САНУ
БЕОГРАД
Кнез Михаилова 35/IV

МОЛБА

НАУЧНОМ ВЕЋУ ИНСТИТУТА

Предмет: Захтев за покретање поступка за избор у научно звање

У складу са одредбама Закона о науци и истраживањима, (Службени гласник Републике Србије, број 49/2019) као и Правилника о стицању истраживачких и научних звања („Службени гласник РС”, број 159/20 и 40/23) молим да покренете поступак за мој избор у звање виши научни сарадник.

У прилогу достављам:

1. Биографију
2. Библиографију
3. Листу цитата - Извештај о цитираности
4. Копију дипломе о стеченом звању доктора наука
5. Копију одлуке о стицању претходног научног звања
6. Доказе у форми прилога о испуњавању квалитативних услова

Ради покретања поступка за избор у звање виши научни сарадник, предлажем следећу комисију:

1. др Небојша Лабус, Виши научни сарадник, Институт техничких наука САНУ
2. др Смиља Марковић, Научни саветник, Институт техничких наука САНУ
3. др Жељко Камберовић, Редовни професор, Технолошко-металуршки факултет, Универзитет у Београду

У Београду,

_____._____. 2023. године

Подносилац молбе:
др Александар Митрашиновић
Научни сарадник ИТН САНУ

БИОГРАФИЈА

др Александар Митрашиновић



<https://www.itn.sanu.ac.rs/index.php/sr-cyrl-rs/naucni-saradnici/aleksandar-mitrasinovic>

Др Александар Митрашиновић је рођен 1970. у Београду где је завршио основну школу и Прву београдску гимназију. Дипломирао је на Технолошко-металуршком факултету Универзитета у Београду 1997. године, са темом „Numerical modeling and computer simulation of the BOF process using mass and energy balance”. Магистрирао је на Факултету за машинство, материјале и аутоапликације Универзитета у Виндзору (University of Windsor) 2004. године, са темом „Development of thermal analysis and analytical techniques for the assessment of porosity and metallurgical characteristics in 3XX aluminum alloys” и стекао звање магистар наука. Докторирао је на Факултету за науке о материјалима и инжењерство Универзитета у Торонту (University of Toronto) 2010. године, са темом „Characterization of the Copper-Silicon System and Utilization of Metallurgical Techniques in Silicon Refining for Solar Cell Applications”.

Александар Митрашиновић је запослен у Институту техничких наука САНУ од 08.08.2019. године где и сада ради. У звање научног сарадника изабран је у Институту техничких наука САНУ 23. марта 2019. године.

| Током студија, у периоду од 1995. до 1997., је био ангажован у Српском хемијском друштву и Катедри за металургију гвожђа и челика Универзитета у Београду, на пословима помоћи у организовању конференција и објављивању часописа Српског хемијског друштва. Од 1997. до 1999. године је био запослен у „Ливници Вршац“ као шеф производње. Затим је од 1999. до 2001. радио у ливници уметничког лива „Симком“, на организацији производње и продаје Morganite Thermal Ceramics ливачких лонаца. Од 2005. је био запослен на Универзитету у Торонту, где је био ангажован на припреми и реализацији пројекта финансиралих од стране Natural Sciences and Engineering Research Council of Canada (NSERC), Ontario Centre of Excellence (OCE), Mathematics of Information Technology and Complex Systems (MITACS) затим Southern Ontario Development Program (SODP), као и од независно финансиралих удружења. У периоду од 2010. до 2013. је био запослен на Универзитету Вотерлу (University of Waterloo), као координатор између два универзитета на пројектима везаним за рециклирање отпада, производњу наночестица и добијање енергије из биомасе. Мултидисциплинарна истраживачка делатност др Митрашиновића захвата области добијања материјала за обновљиве изворе енергије и развој напредних размењивача топлоте, карактеризације материјала, математичког и компјутерског моделовања природних процеса, конверзије енергије и размене топлоте, и изналажење нових материјала и процеса у области екстрактивне металургије ради заштите животне средине.

У објављеном патенту 2022/8, Р-2021/0110 је дата процедура за ин-ситу детекцију кључних параметара фазних трансформација легура алуминијума током њиховог очвршћавања под сниженим притиском, што даље омогућава квантитативну анализу структуре узорка формираног под контролисаним притиском. Конструкција уређаја омогућава и смањење растворених гасова, испаравање нежељених елемената, као и последично добијање течних легура изузетно високе чистоће (Прилог #01).

Кандидат је активно учествовао у промоцији и унапређењу предузетничких програма у Републици Србији, преносећи своја искуства из Канаде. Априла 2017. је

одржао предавање у свечаној сали САНУ, заједно са тада замеником министара за образовање др Владимиром Поповићем, академиком др Слободаном Вукосављевићем, председником привредне коморе Александром Кемивешем, ректорком Иванком Поповић, и другима (Прилог #02). На међународној конференцији “International Conference on Engineering and Applied Science” одржаној јула 2012. године у Пекингу, кандидат је био председавајући секције „Material Science and Engineering I“ (Прилог #03). Учествовао је и у уређивању тада новог часописа Silicon (Guest Editorial, рад #22)

Одржао је предавање по позиву на XXIX International Materials Research Congress, августа 2021. године у Канкун, Мексико (Прилог #04).

У периоду после избора у звање научни сарадник, кандидат је био руководилац пројектног задатка „Ревалоризација продуката сагоревања угља у термоелектранама“ у оквиру пројекта „Периодична мерења емисија загађујућих материја у ваздух из блокова ТЕНТ-А, ТЕНТ-Б, ТЕ Колубара и ТЕ Морава“ (Прилог #05).

На Универзитету Торонто, кандидат је учествовао у изради магистарске тезе студента Фенг Чена (Прилог #06). Након избора у звање научни сарадник, кандидат учествује у изради доктората истраживача Огњена Ристића са машинског факултета (библиографија, рад #32) као и у изради докторске тезе Јасмине Нешковић (Прилог #07, радови #32 и #33). У оквиру пројекта фонда за науку Републике Србије програма Призма, где је октобра 2022. године кандидат аплицирао као вођа пројекта, истраживач Јасмина Нешковић ће бити вођа пројектног задатка.

Од 28 радова 26 је из групе M20 је објављено као резултат међународне сарадње где су коаутори колеге са Универзитета из Канаде, САД, Немачке, Чилеа, Мексика, и Кине. Листа афилијација коаутора на научним радовима обухвата и међународне компаније као што су Freeport-McMoRan Copper & Gold Inc., Vale SA, Mosaic Potash Inc., Inforica Inc., Serbia Zijin Mining D.O.O.

Као члан, TMS (The Minerals, Metals and Materials Society) (Прилог #08) кандидат је био препознат од стране удружења америчких ливаца као истакнут појединац због његовог доприноса у унапређењу аутомобилске индустрије (Прилог #09).

Др Митрашиновић је до сада, у оквиру радова са листе цитираног индекса (SCI - Science Citation Index), објавио пет радова у међународним часописима изузетних вредности (M21а категорије, 1.8 коаутора по раду), осам радова у врхунским међународним часописима (M21, 2.5 коаутора по раду) и једанаест у истакнутих међународним часописима (M22, три коаутора по раду). Укупна M вредност бодова свих објављених радова износи 198.5. На шест кључних радова кандидат је једини аутор док је просечан број аутора по раду испод три. Такође, из категорије M20 у којима је објављено 28 радова кандидат је 23 пута први аутор, два пута последњи, и 25 пута кореспондирајући аутор. Према базама података Web of Science и Scopus, закључно са 16. август 2023. године, радови др Александра Митрашиновића цитирани су укупно 406 пута (348 хетероцитата), H-индекс= 11.

Рецензент је међународних часописа изузетних вредности, примери из последње две године укључују Carbon, Langmuir, Thermochimica Acta, и шест рукописа у MDPI часописима (Прилог #10).

БИБЛИОГРАФИЈА

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 eNauka: <https://enauka.gov.rs/cris/rp/rp07133/otherinfo.html>

Радови објављени у међународним часописима пре избора у звање научни сарадник

M21a

1. A. M. Mitrašinović, R. D'Souza and T. Utigard

Impurity Removal and Overall Rate Constant during Low Pressure Treatment of Liquid Silicon

Journal of Materials Processing Technology, (2012) 212, 78-82.

M21a, 4/43 Engineering, Industrial IF(2011)=1.783

<https://doi.org/10.1016/j.jmatprotec.2011.08.006>

2. A. M. Mitrašinović and F. Robles Hernandez

Determination of the Growth Restriction Factor and Grain Size for Aluminum Alloys by a Quasi-Binary Equivalent Method,

Materials Science and Engineering A, (2012) 540, 63-69.

M21a, 6/76 Metallurgy & Metallurgical Engineering IF(2012)=2.108

<https://doi.org/10.1016/j.msea.2012.01.072>

3. A. M. Mitrašinović

Photo-catalytic Properties of Silicon and Its Future in Photovoltaic Applications, Renewable & Sustainable Energy Reviews, (2011) 15, 3603-3607.

M21a, 4/81 Energy & Fuels IF(2011)=6.018

<https://doi.org/10.1016/j.rser.2011.05.017>

M21

4. A. Mitrašinović

Effect of Temperature and Graphite Immersion Method on Carbothermic Reduction of Fayalite Slag.

JOM, (2017) 69, 1682-1687.

M21, 12/75 Metallurgy & Metallurgical Engineering IF(2017)=2,135

<https://doi.org/10.1007/s11837-017-2455-y>

5. L. Pershin, A. Mitrasinovic and J. Mostaghimi

Treatment of Refractory Powders by a Novel, High Enthalpy DC Plasma, Journal of Physics D: Applied Physics, (2013) 46(22), 224019.

M21, 26/125 Physics, Applied IF(2011)=2,544

<https://doi.org/10.1088/0022-3727/46/22/224019>

6. A. M. Mitrašinović and T. Utigard
Copper Removal from Hypereutectic Cu-Si Alloys by Heavy Liquid Media Separation,
Metallurgical and Materials Transactions B, (2012) 43(2), 379-387.
M21, 16/76 Metallurgy & Metallurgical Engineering; IF(2012)=1.212
<https://doi.org/10.1007/s11663-011-9614-2>

7. A. Mitrasinovic, L. Pershin, J. Wen and J. Mostaghimi
Recovery of Cu and Valuable Metals from E-waste Using Thermal Plasma Treatment
JOM, (2011) 63(8), 22-26.
M21, 12/75 Metallurgy & Metallurgical Engineering; IF(2011)=1.421
<https://doi.org/10.1007/s11837-011-0132-0>

8. A. M. Mitrašinović and R. D'Souza
Hydrogen effervescence from the aluminum alloy melts,
JOM, (2012), 64(12), 1448-1452.
M21, 22/76 Metallurgy & Metallurgical Engineering; IF(2012)=1.053
<https://doi.org/10.1007/s11837-012-0472-4>

9. A. Mitrasinovic, F.C. Robles Hernández, M. Djurdjevic, J.H. Sokolowski
On-line prediction of the melt hydrogen and casting porosity level in 319 aluminum
alloy using thermal analysis,
Materials Science and Engineering: A, (2006) 428(1-2), 41-46.
M21, 51/175 Materials Science, Multidisciplinary; IF(2006)=1.490
<https://doi.org/10.1016/j.msea.2006.04.084>

M22

10. A. M. Mitrašinović and R. J.C. D'Souza
Effect of initial temperature on actual elemental evaporation rate in Al-Si-Cu mixture
during free cooling in near-vacuum conditions,
Vacuum, (2016) 134, 99-102.
M22, 85/146 Physics, Applied; IF(2016)= 1.530
<https://doi.org/10.1016/j.vacuum.2016.10.008>

11. A. Wolf and A. M. Mitrašinović,
Nickel, copper and cobalt coalescence in copper cliff converter slag
Journal of Mining and Metallurgy, Section B: Metallurgy, (2016) 52(2), 143-150.
<https://doi.org/10.2298/JMMB150823024W>

12. A. M. Mitrašinović and A. Wolf
Separation and Recovery of Valuable Metals from Nickel Slags Disposed in Landfills,
Separation Science and Technology, (2015) 50(16), 2553-2558.
M22, 88/148 Engineering, Chemical IF(2014)=1.171
<https://doi.org/10.1080/01496395.2015.1056360>

13. A. M. Mitrašinović and F. Robles Hernandez
Comparison of solar Si feedstock,
Journal of Thermal Analysis and Calorimetry, (2014) 115(1), 177-183.
M22, 33/76 Chemistry, Analytical IF(2014)=2.206
<https://doi.org/10.1007/s10973-013-3245-6>

14. K. Visnovec, C. Variawa, T. Utigard and **A. M. Mitrašinović**
Elimination of impurities from the surface of silicon particles using hydrochloric and nitric acid,
Materials Science in Semiconductor Processing, (2013) 16, 106-110.
M22, 88/251 Materials Science, Multidisciplinary, IF(2013)=1,761
<https://doi.org/10.1016/j.mssp.2012.06.009>
15. **A. M. Mitrašinović**, R. D'Souza, T. Utigard and J. Z. Wen
Modeling of high temperature low pressure silicon refining process,
Mineral Processing and Extractive Metallurgy Review, (2013) 34(5) 331-339.
M22, 33/75 Metallurgy&Metallurgical Engineering IF(2013)=0.690
<https://doi.org/10.1080/08827508.2012.684191>
16. Z. Wang, **A. Mitrašinović** and J. Wen
Investigation on Electrostatically Breaking-up of Bio-oil Droplet,
Energies, (2012) 5, 4323-4339.
M22, 35/81 Energy & Fuels IF(2011)=1.865
<https://doi.org/10.3390/en5114323>
17. **A. M. Mitrašinović** and T. Utigard
Trace element distribution in Cu-Si alloys,
Chemical Physics Letters, (2011) 515, 72-77.
M22, 56/134 Chemistry, Physical IF(2011)=2.337
<https://doi.org/10.1016/j.cplett.2011.08.080>
18. M. Li, **A. Mitrasinovic**, G. Plascencia, A. Warczok and T. Utigard
Silicon Rod Heat Generation and Current Distribution,
Journal of Crystal Growth, (2009) 312, 141-145.
M22, 12/25 Crystallography IF(2009)=1.534
<https://doi.org/10.1016/j.jcrysGro.2009.09.048>
- M23
19. **A. M. Mitrašinović**
On the assimilation mechanism of additives used in non-ferrous metals extraction processes,
Canadian Metallurgical Quarterly, (2015) 54(4), 494-449.
M23, 55/73 Metallurgy&Metallurgical Engineering IF(2015)=0.479
<https://doi.org/10.1179/1879139515Y.0000000027>
20. **A. M. Mitrašinović** and A. Wolf
Effect of Reductants on Valuable Metals Separation and Recovery from Copper Cliff Converter Slag,
High Temperature Materials and Processes, (2014) 33(2), 123-129.
M23, 246/260 Materials Sciences, Multidisciplinary IF(2014)=0,377
<https://doi.org/10.1515/htmp-2013-0048>

21. **A.M. Mitrašinović** and T.A. Utigard
Refining Silicon for Solar Cell Application by Copper Alloying,
Silicon, (2009) 1, 239-248.
M23, 92/135 Chemistry, Physical IF(2012)=1,417
<https://doi.org/10.1007/s12633-009-9025-z>

22. **A. M. Mitrasinovic**
Letter to the Editor: “The Promise of Silicon”,
Silicon, (2011) 3, 1.
M23, 92/135 Chemistry, Physical IF(2012)=1,417
<https://doi.org/10.1007/s12633-011-9083-x>

M70

23. **A.Mitrasinovic**, University of Toronto, Ph.D. in Materials Science, 2010
Dissertation: Characterization of the Copper-Silicon System and Utilization of
Metallurgical Techniques in Silicon Refining for Solar Cell Applications.
<https://hdl.handle.net/1807/26210>

Научне публикације објављене након избора у звање научни сарадник

M21a

24. **Mitrašinović A.M.**, Tomić M.
Functional and Environmental Advantage of Cleaning Ti5B1 Master Alloy,
International Journal of Precision Engineering and Manufacturing - Green Technology,
2022, 9(3), 783-793.
M21a, 9/133 Engineering, Manufacturing IF(2020)=5,671
<https://doi.org/10.1007/s40684-021-00339-2>
<https://dais.sanu.ac.rs/handle/123456789/13494>

25. **Mitrašinović A.M.**
Photovoltaics advancements for transition from renewable to clean energy,
Energy, 2021, 237, 121510.
M21a, 3/63 Thermodynamics IF(2021)=8,857
<https://doi.org/10.1016/j.energy.2021.121510>
<https://dais.sanu.ac.rs/handle/123456789/11702>

M21

26. **Mitrašinović A.M.**, Radosavljević M.
Photovoltaic materials and their path toward cleaner energy,
Global Challenges, 2023, 7(2), 2200146.
M21, 18/73 Multidisciplinary Sciences IF(2021)=5.135
<https://doi.org/10.1002/gch2.202200146>
<https://dais.sanu.ac.rs/handle/123456789/13440>

27. **Mitrašinović A.M.**, Odanović Z.
Thermodynamic and kinetics investigation of elemental evaporation from molten Al7Si4Cu alloy,
Thermochimica Acta, 2021, 695, 178816.
M21, 17/61 Thermodynamics IF(2019)=2.762
<https://doi.org/10.1016/j.tca.2020.178816>
https://dais.sanu.ac.rs/handle/123456789/10002?locale-attribute=sr_RS

M22

28. **Mitrašinović A.M.**, Yuankun Y., Stopic S., Radosavljević M. Feasibility of Recovering Valuable and Toxic Metals from Copper Slag Using Iron-Containing Additives. *Metals* 2023, 13, 1467.

M22, 24/78 Metallurgy&Metallurgical Engineering IF(2022)=2.900

<https://doi.org/10.3390/met13081467>

<https://dais.sanu.ac.rs/handle/123456789/14826>

29. **Mitrašinović A.M.**, Momčilović D.B., Odanović Z. Assessment of Grain Size and Grain Refinement Efficiency by Calculation of Released Heat Attributed to Formation of Primary Aluminum Crystals During Solidification of Al7Si4Cu Alloy,

Trans. of the Indian Institute of Metals, 2021, 74(8), 1917–1922.

M22, 45/80 Metallurgy&Metallurgical Engineering IF(2020)=1.499

<https://doi.org/10.1007/s12666-021-02279-6>

<https://dais.sanu.ac.rs/handle/123456789/11736>

M32

30. **Mitrašinović A.M.**

Invited Speaker: QUALITY IMPROVEMENT OF SECONDARY ALUMINUM ALLOYS,

XXIX International Materials Research Congress, A7. Advanced Structural Materials: Mechanics, Properties and Applications of Emerging Materials, AUGUST 16, 2021.

<https://www.mrs-mexico.org.mx/imrc2021/symposium-A7>

<https://dais.sanu.ac.rs/handle/123456789/14714>

M52

31. **Mitrašinović A.**, Nešković J., Labus N., Radosavljević M.

The effect of the refractory material on the phase transformation parameteres during forming of the Al-8wt%Si-3wt%Cu structure

Tehnika, 2023, 78(1), 9-14.

<https://doi.org/10.5937/tehnika2301009M>

<https://dais.sanu.ac.rs/handle/123456789/14224>

32. **Mitrašinović A.**, Nešković J., Ristić O., Labus N., Radosavljević M., Odanović Z. Monitoring the amount of formed solid phase in aluminum alloy under free cooling conditions

Tehnika, 2023, 78(2), 138-144.

<https://doi.org/10.5937/tehnika2302138M>

<https://scindeks.ceon.rs/article.aspx?artid=0040-21762302138M>

M94

33. **Mitrašinović A.M.**

Vessel With a Lid For Collecting and Solidifying Liquid Metal Specimens Under Reduced Pressure

Intellectual Property Gazette 2022/8, P-2021/0110

<https://www.zis.gov.rs/wp-content/uploads/Glasnik-08-2022.pdf>

Врста и квантификација научноситраживачких резултата др Александра Митрашиновића:

Категорија	Број	Вредност индикатора	Укупна вредност
M21a	5	10	50
M21	8	8	64
M22	11	5	55
M23	4	3	12
M32	1	1.5	1.5
M52	2	1.5	3
M70	1	1	6
M94	1	7	7
Укупно			198.5

Врста и квантификација научноситраживачких резултата др Александра Митрашиновића након избора у звање научни сарадник:

Категорија	Број	Вредност индикатора	Укупна вредност
M21a	2	10	20
M21	2	8	16
M22	2	5	10
M32	1	1.5	1.5
M52	2	1.5	3
M94	1	7	7
Укупно			57,5

Испуњење квантитативних захтева за стицање звања виши научни сарадник:

Виши научни сарадник		Неопходно	Остварено
		50	57.5 ✓
Обавезни (1)	M10+M20+M31+M32+M33+M41+M4 2+ M51+M80+M90+M100	40	54.5 ✓
Обавезни (2) ^{*,**}	M21+M22+M23+M81-85+M90-96+ M101-103+M108	22	53 ✓
*	M21+M22+M23	11	46 ✓
**	M81-85+M90-96+M101-103+M108	5	7 ✓

ИЗВЕШТАЈ О ЦИТИРАНОСТИ РАДОВА ДР АЛЕКСАНДРА МИТРАШИНОВИЋА

Према базама података *Web of Science* и *Scopus*, 16. августа 2023. године, радови др Александра Митрашиновића цитирани су укупно 406 пута (348 хетероцитата)

H-индекс= 11

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Прилог 01



РЕПУБЛИКА СРБИЈА
ЗАВОД ЗА ИНТЕЛЕКТУАЛНУ СВОЈИНУ
СЕКТОР ЗА ПАТЕНТЕ
ОДЕЉЕЊЕ ЗА МАШИНСТВО,
ЕЛЕКТРОТЕХНИКУ И ОПШТУ ТЕХНИКУ
990 број 2022/6594-П-2021/0110
Датум: 05.07.2022. године
Београд, Кнегиње Љубице 5

2-3/3

МИТРАШИНОВИЋ Александар
Загорска 36
11080 Земун

ПРЕДМЕТ: ОБАВЕШТЕЊЕ о објави пријаве патента број П-2021/0110 од 29.01.2021. године

У управном поступку по пријави патента број П-2021/0110 од 29.01.2021. године, Завод за интелектуалну својину утврдио је да се предметна пријава, сходно члану 102. Закона о патентима („Службени гласник РС”, бр. 99/11, 113/17 - др. закон, 95/18, 66/19 и 123/21), може објавити.

У „Гласнику интелектуалне својине”, број 8 / 2022 од 31 AUG 2022 године, биће објављени следећи подаци о пријави патента:

(51) МКП: *B22D 41/00* (2006.01)
G01N 1/10 (2006.01)

(11) Број документа:
П-2021/0110

(13) А1

(21) Број пријаве:
П-2021/0110

(22) Датум подношења:
29.01.2021.

(61) Број и датум основне
пријаве: П-

(62) Број и датум подношења
првобитне пријаве: П-

(63) Број пријаве из које је
пријава претворена и датум
претварања у пријаву
патента: МП-

(30) Подаци о затраженом
праву првенства:

(54) Назив проналаска:

(RS) КАШИКА СА ПОКЛОПЦЕМ ЗА ПРИХВАТАЊЕ И ОЧВРШЋАВАЊЕ ТЕЧНОГ МЕТАЛА ПОД СМАЊЕНИМ ПРИТИСКОМ

(EN) A VESSEL WITH A LID FOR COLLECTING AND SOLIDIFYING LIQUID METAL SPECIMENS UNDER REDUCED PRESSURE

(71) Подносилац МИТРАШИНОВИЋ, Александар, Загорска 36, 11080, Земун, RS
пријаве:

(72) Проналазач: МИТРАШИНОВИЋ, Александар, Загорска 36, 11080, Земун, RS

(74) Пуномоћник:

(86) Број и датум подношења РСТ/
међународне пријаве:

(87) Број и датум међународне објаве WO
пријаве

Уз објаву пријаве биће објављен извештај о претраживању стања технике.

Према одредби члана 102. став 2. Закона о патентима пријава патента се неће објавити уколико одустанете од пријаве пре завршетка техничких припрема за њену објаву.

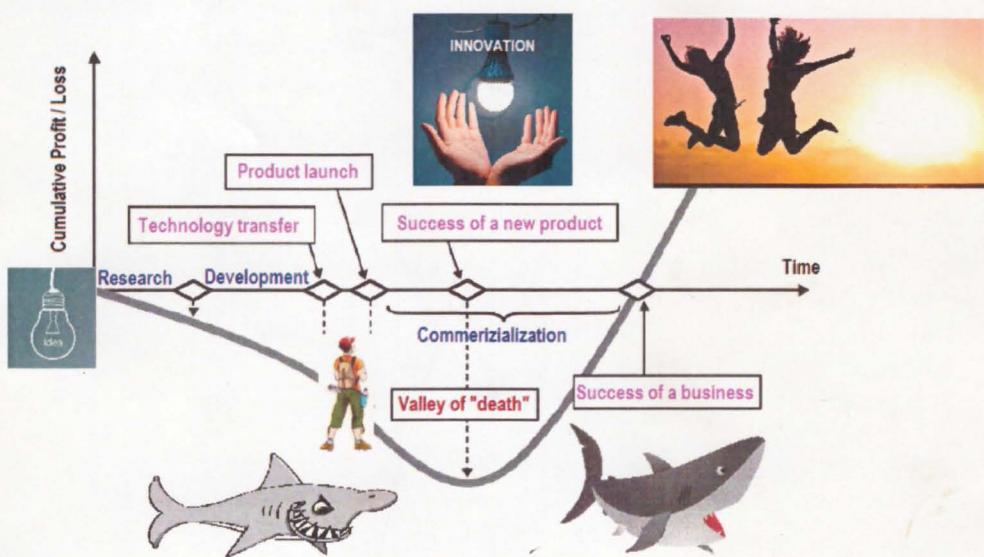
Техничке припреме за објаву пријаве патента сматрају се завршеним за сваки наредни број службеног гласила 15 дана пре објаве службеног гласила. Службено гласило се објављује последњег радног дана у месецу.

Телефон: 011/20-25-908





“FROM AN IDEA TO THE INNOVATION”



„ОД ИДЕЈЕ ДО ИНОВАЦИЈЕ“

Serbian Academy of Sciences and Arts (SASA), Belgrade, Knez Mihailova 35/II
April 7, 2017, from 9:00 to 17:30

Српска академија наука и уметности (САНУ), Београд, Кнез Михаилова 35/II
7. април 2017. године, од 9:00 до 17:30

PROGRAM AND SUMMARIES OF PRESENTATIONS

ПРОГРАМ И РЕЗИМЕИ ПРЕЗЕНТАЦИЈА

- 09:00–09:25 Welcome session (Отварање скупа)
academician Vladimir Kostić,
President of SASA
academician Zoran Lj. Petrović,
Secretary of the Department of Technical Sciences of SASA
academician Dejan B. Popović
- 09.30–11:00 Innovation vs. Research and Development – European Experiences and Governmental Support (Однос иновација и истраживања и развоја: европска искуства и подршка државе)
• Dr. Thomas Sønkjær, Director VILLUM FONDEN, Denmark:
Public and private funding of the Danish food chain from research idea to business. (Јавно и приватно финансирање данског ланца исхране: од истраживачке идеје до бизниса)
• Dr. Radivoje Popović, Professor Emeritus EPFL, Lausanne;
Chief Technology Officer of SENIS AG, Zug; Switzerland and scientific advisor of Sentronis AD, Niš, Serbia: *A magnetic measurement business based on the resources in Switzerland and Serbia* (Бизнис који потиче од мерења магнетизма базиран на ресурсима Швајцарске и Србије)
• Dr. Vladimir Popović, Professor of Mechanical Engineering, University of Belgrade and the Deputy Minister of the Ministry of Education, Science and Technological Development of Serbia: *Overview of Serbian innovation system (weaknesses/advantages) and how to move on?* (Преглед иновација система Србије (слабости / предности) и како даље?)

- 11:30–12:50 Serbian success stories in innovative R&D („Српски успехи“ у иновативном истраживању и развоју)
- Dr. Miodrag Temerinac, a distinguished scientist, and inventor, RT-RK, Novi Sad: *Challenges on the bridge between academy and industry – an experience from Novi Sad* (Изазови на мосту између академије и индустрије - искуства из Новог Сада)
 - Dr. Ivan Gligorijević, mBrainTrain, Belgrade: *From an idea to the innovation – mBrainTrain experience* (Од идеје до иновације - mBrainTrain искуство)
 - Dr. Dragan Popović, CEO Schneider-Electric-DMS, Novi Sad: *Advanced Distribution Management System* (Напредни дистрибутивни менаџмент систем)
 - Dr. Slobodan Vukosavić, University of Belgrade, The School of Electrical Engineering: *Innovation in power electronics – experiences from the University of Belgrade and related R&D enterprises* (Иновације у енергетској електроници – искуства Универзитета у Београду и сродних Р&Д предузећа)
- 14:00–16:00 The governmental assistance to the process From idea to innovation (Улога државе, образовних и истраживачких установа у генерирању и очувању интелектуалне својине и иновација)
- Aleksandar Kemiveš, Chamber of Commerce and Industry of Serbia, Belgrade: *Chamber of Commerce mechanisms for the economy development based on the knowledge and innovations* (Механизми коморског система за развој привреде базиран на знању и иновацијама)
 - Milena Kostadinović, Innovation Fund, Belgrade: *The role of the Serbian Innovation Fund in the process from an idea to innovation* (Значај и резултати Иновационог фонда за иновације на процес од идеје до иновације)
 - Dr. Ivanka Popović, Vice-Rector, University of Belgrade: *Bridging the gap between academia and industry* (Премошћење процепа између научних и производних институција)

- Gordana Danilović Grković, Science Technology Park Belgrade: *The importance of the development of incubators and technology parks in the process of commercialization of innovations* (Значај развоја инкубатора и технолошких паркова у процесу комерцијализације идеја)
- Dr Aleksandar Mitrašinović, collaborator of ITN SASA: *The Canadian model for the „I to I“ projects* (Канадски модел за прелаз од идеје до иновације)

16:30–17:30 Discussion and closing remarks (Дискусија и закључење састанка) Moderator: Dejan Popović



Public and private funding of the Danish food chain from research idea to business

(Јавно и приватно финансирање данског ланца исхране: од истраживачке идеје до бизниса)

Dr. Thomas Sinkjær, Director VILLUM FONDEN, Denmark; professor Aalborg University, Aalborg, Denmark

Summary

Denmark has a well-functioning research and innovation system. An important contributing factor has been the versatile system of funding from both public and private funders supporting both young and experienced researchers with smaller and large grant.

This has resulted in an extensive research production and a high scientific impact.

When it comes to innovation performance, Denmark is by the European Commission considered an innovation leader performing well above EU level. A recent study shows that Danish universities perform on the level of internationally well-acknowledged research institutions, when it comes to creating value from patents.

Danish private foundations play a vital part in funding Danish research. Denmark has a high degree of private funding for research compared to other countries within OECD. This is due to tax laws, which make it possible for private companies to place parts of their income in private philanthropic foundations.

A recent mapping shows that 12 foundations in the period of 2012-2014 contributed with almost the same amount of funding as the 8 public councils, foundations and funding pools – 9 bn (EUR 1.2 bn). This funding becomes even more significant in the future, since funding from the private foundations is steadily increasing.

Another important fact is the doubling intake of PhD students since 2003. Upon finishing their education PhD's are recruited not only for jobs in the public sector, but also get employment in the private sector. A recent study has shown that the quality of the PhD theses is quite good compared to international standards.

Future challenges in Denmark might be the decrease in funding for the “middle group” of researchers. This is explained by an illustration of an hour glass. Funding



A magnetic measurement business based on the resources in Switzerland and Serbia

(Бизнис који потиче од мерења магнетизма базиран
на ресурсима Швајцарске и Србије)

Dr. Radivoje Popović, professor emeritus EPFL, Lausanne, Switzerland; chief technology officer of SENIS AG, Zug, Switzerland; and scientific advisor of Sentronis AD, Nis, Serbia

Summary

We present an example of developing a small international business with high-technology products and services by synergy of two start-up companies situated in two very different environments.

One of the start-ups, Senis AG, is in Switzerland. For the last 8 consecutive years, Switzerland was ranked (by Word Economic Forum, WEF) the world's most competitive economy. Among the factors for the ranking are higher education and training, innovation, and technological readiness. Swiss economy is dominated by small and medium enterprises (99.5% of all firms), many of them the world leaders in their respective niche markets. Such an environment enabled Senis to mobilize most of the necessary physical, technological, and social resources through cooperation with nearby companies, and enjoy the high reputation of its country. The human resources were completed through a symbiotic relation with a Serbian start-up, Sentronis AD.

Sentronis AD was founded a few years after the last wars at the Balkans, in a country with almost destroyed industry, high unemployment, lack of motivation, major brain drain, and bad reputation in most of the world. But thanks to the still operational education system of the country, and the help of the Swiss partner in training at work, Sentronis could develop the adequate human resources.

The consortium Senis/Sentronis has developed a number of magnetic sensors and instruments for high-accuracy measurements of magnetic field and electrical current. Under the brand name SENIS, these instruments are now routinely used in most particle accelerators in the world, and in most companies that supply automotive industry with magnetic sensors.

Senis/Sentronis is developing its business with very modest financial resources. Most of the venture capital was substituted by the income from the sales of engineering services, early products, and intellectual property, through an economic mechanism known as bootstrapping.



Overview of Serbian innovation system (weaknesses/advantages) and how to move on?

(Преглед иновација система Србије (слабости / предности) и како даље?)

Dr. Vladimir Popović, Professor of Mechanical Engineering, University of Belgrade and the Deputy Minister of the Ministry of Education, Science and Technological Development of Serbia

Summary

This presentation analyses the weaknesses and advantages of innovation system of the Republic of Serbia. The main idea is how to move on. Some of the answers to this question are:

- raising the level of innovation policy to the Government level;
- strengthening the political support, responsibility, continuity and coordination;
- making innovations a part of sectorial policies (information technologies, agriculture, energetics, traffic, etc.);
- understanding that innovation is a condition for economic competitiveness;
- preserving the scientific and research potential that we have (especially in human resources), with simultaneous development of new resources, since there is neither advance nor prosperity without them;
- greater international openness and orientation;
- increasing the contribution of public research to social and commercial development (researchers should be enabled to carry out research even outside of the academic area);
- establishing powerful and explicit relations between project and institution financing, with contracting being based exclusively on results,
- establishing clear and defined relations between financing from structure funds and financing from national sources.

*Challenges on the bridge between academy and industry -
an experience from Novi Sad*

*(Изазови на мосту између академије и индустрије -
искуства из Новог Сада)*



Dr. Miodrag Temerinac, a distinguished scientist, and inventor, RT-RK, Novi Sad; professor University of Novi Sad, Serbia

Summary

A successful transfer of research results into industry faces a lot of interfacing challenges between these two different worlds. Some typical issues on this bridge are the distinction between invention and innovation as well as the conflict between open scientific publications and restrictive patent rules. Society-specific conditions additionally impact possible solutions. But, positive best-practice examples in engineering fields could be a useful advice on this way.

This presentation addresses challenges and benefits of the transfer between academy and industry showing a possible way to overcome them. The proposed approach is illustrated by a successful story about the RT-RK Institute, a software engineering company from Novi Sad.



From an idea to the innovation – mBrainTrain experience (Од идеје до иновације - mBrainTrain искуство)

Dr. Ivan Gligorijević, mBrainTrain, Belgrade, Serbia

Summary

mBrainTrain started from the academia group of individuals who have identified a need for a specific research device. Mobile brain recordings seemed as a natural way to progress the laboratory constricted methods of investigating brain activity to freely moving environment. But how does an idea become a product? What is the exact gap between a “great one time graph” that is enough for a high impact journal publication and an “always has to work” product that someone is willing to pay?

mBrainTrain made a first Android supported electroencephalography (EEG) based scientific brainwave reader. It was conceived with a specific application in mind – stroke rehabilitation based on visual, EEG-supported neurofeedback. However, it evolved to a versatile “Smarting” platform for research applied in sports, psychology, stroke rehabilitation, neuroergonomics, meditation and many other disciplines in over 15 countries where it is being used today.

It is of paramount importance to understand the value-add chain as an integral part of market oriented innovation. Everything from logistics, cash-flow, client support, administration are inseparable parts of what is called the product. This is what distinguishes it from one-time showcases or research tools adapted for a short-time application in mind. mBrainTrain has gained a lot of experience with Smarting product. Its natural evolving is a predictive road.



Advanced Distribution Management System (Напредни дистрибутивни менаџмент систем)

Dr. Dragan Popović, CEO Schneider-Electric-DMS, Novi Sad, Serbia

Summary

Increasing demand for reliable, safe and efficient operation of power grids leads network operators to search for an efficient operational platform, gathering all applications and solutions on one integrated platform, model and user interface. Consequently, the electricity market moves in the direction of integrated sophisticated software products, which may unify operation technologies (OT) and information technologies (IT) in the single platform. Proven and award winning “Advanced Distribution Management System” is the Schneider Electric response to these growing trends.

Schneider Electric’s Advanced Distribution Management System (ADMS) is a modern and comprehensive solution for electrical network management, control, monitoring, analysis, optimization, planning, simulations and training, applicable on all voltage levels from low voltage up to the transmission. ADMS is fully integrated smart control system for Utilities, integrating six modules into a single platform for a seamless operation of power systems: (i) remote control and dynamic network monitoring and management (SCADA); (ii) advanced mathematical model, simulations, analysis, optimization and planning of distribution network (DMS); (iii) advanced mathematical model, simulations, analysis, optimization and planning of transmission network (EMS); (iv) comprehensive workflow of unplanned and planned outages (OMS); (v) control and management of generation units (PCS) and (vi) distribution energy resource management (DERMS)

The key benefits, which ADMS may bring to Utilities, are improving safety and reliability of operation, reducing peak demand and power losses, reducing outage time, improving performance of the grid (KPIs), increasing utilization of network facilities, reducing investments, improving power quality and customer services.



Innovation in power electronics - experiences from the University of Belgrade and related R&D enterprises

(Иновације у енергетској електроници - искуства Универзитета у Београду и РиД предузећа)

Dr. Slobodan Vukosavić, University of Belgrade, The School of Electrical Engineering, corresponding member of the Serbian Academy of Sciences and Arts (SASA)

Summary

Several R/D groups clustered around the University of Belgrade came out with their first innovations in power electronics some 20 years ago. The cluster matured quickly into design house with established experience in developing, prototyping and manufacturing consumer, industrial, automotive, appliance and railways products involving power electronics. Initially, most solutions were developed for the local OEM clients. Over the years, the local clients and the local manufacturing network subsidized, affecting the process of devising, developing and deploying the power electronics solutions. Current activities include consultancy services, product conception, development of reference designs and OEM kits, rapid prototyping, re-engineering as well as pre- and post-production support. While most innovations are still developed locally, production steps are mostly performed at nowadays remote client sites. The changes spoken of earlier are illustrated by presenting the most conspicuous innovations in the field of power electronics.



Chamber of Commerce mechanisms for the economy development based on the knowledge and innovations

(Механизми коморског система за развој привреде базиран на знању и иновацијама)

Aleksandar Kemiveš, Chamber of Commerce and Industry of Serbia, Belgrade

Summary

The Chamber of Commerce system in Serbia is moving through evolution to better servicing the needs and interests of the economy. A new law on associations, compulsory membership, and the unique chamber system is being developed. The system relies on the following principles: 1) the importance of innovation for growth and economic development and competitiveness of the Serbian economy, 2) the development of innovation and the effective implementation of innovation in the economy, 3) creation of a stimulating innovation ecosystem for the creation and development of high-tech, fast-growing companies at the local, national, and regional level by proposing and promoting development measures to raise the awareness on the strengthening of innovative activities and legal obligations to monitor the creation of innovation, 4) support for innovation of all relevant actors who base their business on knowledge and innovation, greater visibility and market, 5) support for inventors, innovators, and innovative companies on the path from idea to market - positioning ideas, gathering relevant information, development of strategies, improvements of communication between researchers and the institutions concerned, finding innovative solutions with potential users, 6) establishment of efficient, effective and long-term collaboration between research organizations and businesses and inventors, 7) promotion of the cooperation in joint scientific research and development projects with the aim of creating commercially applicable new products, services, and innovative technologies, 7) support the implementation and application of incentives and commercialization of research results; support the use of modern technologies and building infrastructure innovation organizations - the signing of the Memorandum with the Center for Technology Transfer and a protocol on long-term, professional, scientific and business cooperation with the University of Belgrade, 8) organization of training courses, workshops, seminars and conferences on the topic of innovation, technological development, intellectual property, innovative start-up companies, 9) cooperation with the Institute for Intellectual Property, 10) introduction of new financial instruments for the innovation-advisory support in applying for funds to start or accelerate their business, mentoring and monitoring trends, 11) participation in national and international projects based on knowledge.



Supporting companies to foster innovation
(Подршка компанијама да подстичу иновације)

Milena Kostadinović, Innovation Fund, Belgrade

Summary

Operational since 2011, the Innovation Fund has been a pioneering effort in Serbia to operationalize and institutionalize the state support to innovative entrepreneurship and research and development. Its programs are funded by the European Union, which has so far allocated nearly EUR 13 m from the IPA funds, and co-funded by the Republic of Serbia.

Between 2011 and 2016, the Innovation Fund implemented the **Innovation Serbia Project** with the primary goal of piloting financial programs supporting early-stage innovation activities and stimulating research and development (R&D) with commercial potential in private enterprises in Serbia. This Project, with a total value of EUR 8.4 million, was funded by the 2011 EU Instrument for Pre-accession Assistance (IPA), and administered by the World Bank.

In 2016 the Innovation Fund launched two new programs: the pilot activity to demonstrate that commercialization of inventions arising from Serbian public R&D institutions is possible and to enhance capacities of the TTOs through real life experience by working together in the commercialization process from the disclosure until deal closing – **the TTF Program**, and a novel financial program for financing innovative projects with potential for commercialization, resulting from cooperation between public R&D organizations and private SMEs – **the Collaborative Grant Scheme for R&D Organizations and Private Sector Enterprises**. In December 2016, 14 new projects out of 96 submitted from various fields of science and technology were selected as recipients of the Innovation Fund's support. Their implementation is currently under way.

In addition to the two new programs, in 2017 the Innovation Fund will continue to provide its existing service lines for Serbian entrepreneurs and researchers – the **Mini Grants** and **Matching Grants** programs.



Bridging the gap between academia and industry

(Премошћење процепа између научних и производних институција)

Dr. Ivanka Popović, Vice-Rector, University of Belgrade, Serbia

Summary

The gap between the needs of industry and the aspirations of the academic community is very large. There is a strong mismatch in perceptions of the two on issues related to technology development. At present, the academic community is not sufficiently geared to face this challenge of translating an evolving idea into technology development.

Although large industrial companies have the resources to invest in technology development initiatives, academic resources are often used only for minor technological innovation. In such interactions, industry's expected time frames have been immediate and investment is directed towards efforts that promise result-oriented solutions. On the other hand, researchers prefer to work towards the creation of knowledge in specialized areas. For industry-related problems, a researcher must explore a variety of options which is time consuming. Academia is usually oriented towards R&D industrial activities for funds which help to sustain broader research interests.

Venues need to be created for close interaction starting from conceptualization down to commercialization with emphasis on financial support, especially in countries in which the pre-incubation phase of the innovation is extremely fragile. Universities are expected to provide a system of innovation centers, technology incubation centers and science technology parks that provide support to technological development.

The University of Belgrade has set up such a support structure. It consists of eight innovation centers, the UB Center for Technology Transfer, the Business-Technology Incubator of Technical Faculties and the Belgrade Science Technology Park. The UB is also working on setting up various partnerships for financing schemes that support innovation. The specific constraints of developing an innovation culture in Serbia will be addressed.



The importance of the development of incubators and technology parks in the process of commercialization of innovations

(Значај развоја инкубатора и технолошких паркова у процесу комерцијализације идеја)

Gordana Danilović Grković, Manager, Science Technology Park, Belgrade, Serbia

Summary

Business incubators & technology parks are instruments of regional development. These organizations are used to promote innovation and facilitate the commercialization process. Therefore, it is important to emphasize lessons learned about the course of developing business incubators & technology parks.

The Business Technology Incubator of Technical Faculties Belgrade (BITF) began its activities nine years ago in a historic building on the campus of engineering schools. The initial goal was to encourage young people with ideas to start their own business and by that assist the university community in commercializing the innovations. The program began with regular training related to various topics such as: how to start own business; how to design the operational planning; how to approach the market and start selling the products, how to protect the intellectual property, etc. In the first few years, BITF Belgrade focused its activity on young entrepreneurs and developed a set of services that help new and startup companies to develop. The exceptional potential coming from engineering schools and excellent results achieved during the first six years of operation, despite limited space and financial resources; encouraged the BITF Belgrade to get a grip with the development of the first science-technology park in Serbia. The Government of the Republic of Serbia, the City of Belgrade and the University of Belgrade teamed up to scale the incubator model, with the support of the Swiss Government, and in line with best international practice. The new Science Technology Park Belgrade (STP Belgrade) was set up very quickly as a result of these efforts. During the first 18 months 47 high tech companies, of which 28 startups, have joined the STP Belgrade community. When the alumni Incubator companies are added to this number, an impressive number of 80 companies was reached in the high-tech fields. Their establishment and rapid growth and development show significant potential for innovation in Serbia. If this untapped potential is recognized, extraordinary results can be achieved despite limited financial resources and other obstacles typical for the state in economic transition. In the process of regional development, the Serbian society is trying to bring together stakeholders at all levels and



Canadian model for the I2I projects (Канадски модел за прелаз од идеје до иновације)

Dr Aleksandar Mitrašinović, collaborator of ITN SASA,
Belgrade, Serbia

Summary

Canada allocates about 1.6% of its GDP for science. In recent years more emphasize is given on encouraging the entrepreneurship and innovative thinking in conjunction to the traditional support for fundamental research. An initial success in generating startup and spinoff companies encouraged Canadian policy makers to take one step further. Nowadays, Canadian government and non-profit organizations distribute significant resources not only for innovative projects ready for dissemination but also early stage idea-to-innovation proposals. In 2016, a sharp increase of 15% is reported by the PeHub in funding pre-revenue startups in Canada. The most notable programs and funding bodies that support early stage of research are Idea to Innovation by NSERC, TalentEdge and Commercialization Program by OCE, Accelerate by MITACS, Venture Start program for early-stage by MaRS and Canadian Foundation for Innovation funds by CFI.

Transforming an idea into an innovation is typically the most difficult step in a process of creating new marketable knowledge. Formulating and assessing potential value of the particular idea requires time and often significant resources. However, Canadian policy makers recognized that creating innovative culture delivers great long term gains. Creating an innovative culture motivates students and researchers to freely express and further pursue their ideas. Students that begin their research on the fresh projects show higher proficiency in particular matter than their successors, gain experience at the faster rate, more often purchase career in the same field and become more motivated employees or leaders in spinoff companies. The benefits from the policy shifting are already recognized in sharp increase in number of the startup and spinoff companies while technology industry becoming significant source of income for Canadians. As anticipated, creating and encouraging innovative culture would make stronger and long lasting link between research institutions, experienced scientists and creative students that in turn will further strengthen Ca-

nadian technology industry globally, keep the most talented students from relocating to US and provide high level income for the large part of population.

Presentation Outline: Research in Canada in general; Opportunities for securing funds for I2I in Canada; Resources and network available for startups; Recognizing varieties, differences and requirements in I2I projects; Benefits for students starting their careers on I2I programs; Benefits for experienced researchers working on I2I; Benefits for Canada in creating innovative culture; Similarities between Canada and Serbia regarding research challenges and goals; Examples from personal experience

“The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man. Innovation often starts with something that annoys you personally and is relevant for you. Something you personally really want to change, because you need to. It's the WHY for innovation.”

George Bernard Shaw

International Conference on Engineering and Applied Science

Beijing, China, 24-27 July, 2012

Invitation Letter

June 26, 2012

Dear Prof. Aleksandar M. Mitrašinović,

Thank you very much for being the session chair in **International Conference on Engineering and Applied Science (ICEAS 2012)**. It is our honor to invite you join ICEAS 2012. The outstanding team of reviewers provided this time-consuming service without prior recognition.

The web address for the conference management system is <http://www.iceas2012.org/>

If you have any questions, please do not hesitate to contact the secretariat of ICEAS 2012 by sending your email to iceas@iceas2012.org . In order to help us in organizing a well-prepared and successful international conference, your kind cooperation are highly appreciated. We hope this conference will be successful and fruitful to all participants in both its academic and social aspects.

With best wishes and greetings to you,

Program Committee of ICEAS 2012



Conference Program

Beijing, China, 2012

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Material Science and Engineering I

13:30-15:00, July 25, 2012 (Room 3)

Session Chair: *Prof. Aleksandar M. Mitrašinović*

635: Investigation on Fatigue Damage of The Al5Zn2Mg High Strength

Aluminum Alloy

Shanglei Yang

*Shanghai University of Engineering
Science*

Qinglin Lin

*CSR Sifang Locomotive and Rolling
Stock Co. Ltd.*

349: Effects of the Content of Epoxy Monomers on the Electro-Optical

Properties and Reducing Morphology of Polymer-Dispersed Liquid Crystal Films

Mujtaba Ellahi

*University of Science and Technology
Beijing*

Fang Liu

*University of Science and Technology
Beijing*

Hui Cao

*University of Science and Technology
Beijing*

Huai Yang

*University of Science and Technology
Beijing*

216: Process Design for Production of Solar Grade Si Utilizing Metallurgical

Methods

Aleksandar M. Mitrašinović

University of Toronto

Torstein A. Utigard

University of Toronto

666: Processing and Properties of Multi Walled Carbon Nanotube reinforced

Nano Alumina Ceramics

Figen Kaya

Yildiz Technical University

Ali Can Zaman

Yildiz Technical University

Ugur Sen

Sakarya University

Cengiz Kaya

Yildiz Technical University

Прилог 04

Наслов **IMRC 2021 invitation**

Од Martinez-Rubi, Yadienka <Yadienka.Martinez-Rubi@nrc-cnrc.gc.ca>

За <aleksandar.mitrasinovic@itn.sanu.ac.rs>

Датум 2021-03-12 01:14



- Invitation Simposium A7 IMRC 2021.pdf (803 KB)

Dear Dr. Aleksandar Mitrašinović,

On behalf of the organizers of the Symposium A7 on “Advanced Structural Materials: Mechanics, Properties and Applications of Emerging Materials” to be held within the framework of the **XXIX International Material Research Congress**, I cordially invite you to participate in this symposium as an invited speaker (30 minutes), presenting as a subject matter expert on **Quality Improvement of Secondary Aluminum Alloys**. We strongly believe that your expertise and presence will make the conference much more enriched and beneficial to the participants.

Enclosed please find a flyer with detailed information of our symposium.

The conference will take place in Cancun (Mexico) on 15-20 August, 2021. This year's congress will be held in a hybrid format that will include virtual and in-person modalities. The abstract submission is open until March 19th.

We sincerely hope you can attend and contribute to the success that year after year is achieved by IMRC and the Advanced Structural Materials symposium.

If you accept, please inform us, and then later (but before the March 19th deadline) submit your abstract through the web system of the conference.

You can find all information regarding the conference in its web page: <https://www.mrs-mexico.org.mx/imrc2021/index.php>

Please see the following link for additional symposium information: <https://www.mrs-mexico.org.mx/imrc2021/symposium-A7>

Should you have any question, please feel free to contact us.

A7. Advanced Structural Materials: Mechanics, Properties and Applications of Emerging Materials

August 15-20, 2021, Cancun, Mexico

Symposium organizers: Y. Martínez-Rubí (NRC-Canada), J. López-Cuevas (CINVESTAV-Mexico), J.M. Herrera-Ramirez (CIMAV-Mexico), F. C Robles-Hernandez (UH-USA), J.M Cabrera (UPC-Spain)



Mexico City, April 26th, 2021

Aleksandar Mitrasinovic

n/a

Institute of Technical Sciences of the Serbian Academy of Sciences and Arts

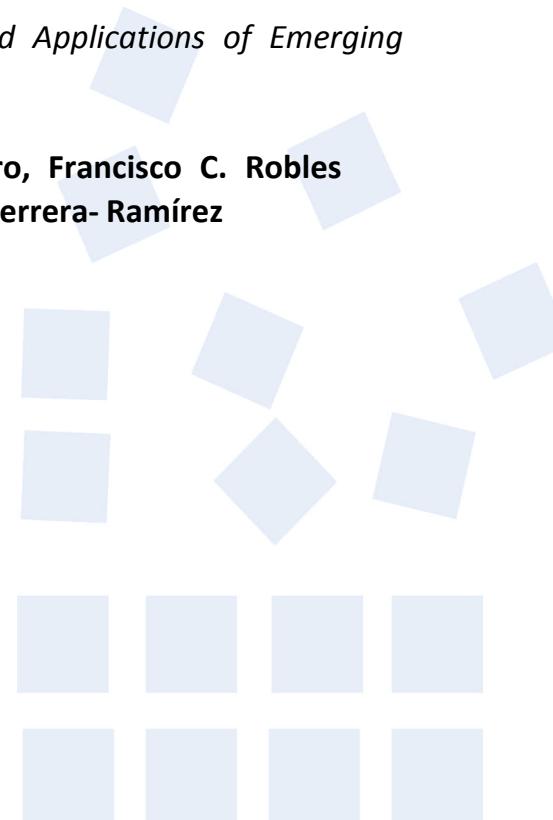
I am pleased to inform you that your contribution "**QUALITY IMPROVEMENT OF SECONDARY ALUMINUM ALLOYS**" by *Aleksandar Mitrasinovic*, has been **accepted** in symposium **A7, Advanced Structural Materials: Mechanics, Properties and Applications of Emerging Materials** at the XXIX International Materials Research Congress, to be held in Cancun in August 15 - 20, 2021.

The presentation has been accepted in the **Invited Talk** modality. Remember that in order to include your abstract in the congress program you must confirm your participation no later than May 21 by choosing the modality you will present your abstract(s); you can do this from your IMRC account.

Organizers of the Symposium

"Advanced Structural Materials: Mechanics, Properties and Applications of Emerging Materials"

Yadienka Martinez Rubi, José María Cabrera Marrero, Francisco C. Robles Hernandez, Jorge López Cuevas, J. Martin Herrera- Ramírez





August 2021

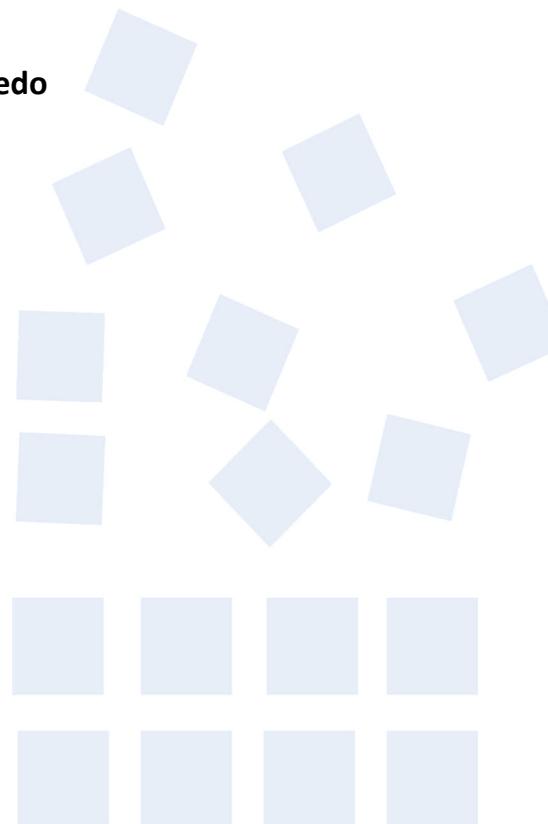
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P r e s e n t

This is to certify that *Aleksandar Mitrasinovic* presented the contribution: **QUALITY IMPROVEMENT OF SECONDARY ALUMINUM ALLOYS** as **Invited Talk** modality, in the *A7. Advanced Structural Materials: Mechanics, Properties and Applications of Emerging Materials Symposium* at the **XXIX International Materials Research Congress** held in Cancun, Mexico from August 15th to 20th, 2021.

Sincerely,

Patricia del Carmen Zambrano Robledo
President





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ПРЕДМЕТ: Потврда о руковођењу пројектним задатком

Овим потврђујем да је др Александар Митрашиновић, научни сарадник Института техничких наука САНУ, у периоду од 1.06.2022. до 31.12.2022. био руководилац пројектног задатка Ревалоризација продуката горевања угља у термоелектранама у оквиру пројекта Периодична мерења емисија загађујућих материја у ваздух из блокова ТЕНТ-А, ТЕНТ-Б, ТЕ.КОЛУБАРА и ТЕ-МОРАВА (бр. Уговора 7049, од 18.03.2022.) чији је руководилац Марко Павловић, дипл.инж.маш. , и који је финансиран од стране ЈП Електропривреда Србије у износу од 27.740.000,00 РСД.

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USING THERMAL SPRAY TECHNOLOGY TO MAKE
HEAT SPREADERS FOR LED COOLING

by
CHEN FENG

A Thesis
Submitted to the Faculty of Graduate Studies
through Mechanical & Industrial Engineering
in conformity with the Requirements for
the Degree of Master of Applied Science at the
University of Toronto

Toronto, Ontario, Canada

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Acknowledgements

This research conducted at the Centre for Advanced Coating Technologies (CACT) in collaboration with the Lumentra Inc, the institute for optical science at the University of Toronto was accomplished possible by the help and support of many individuals and through the financial support from Auto21 of Canada.

First of all I would like to express my sincere thanks to my supervisor, Professor Sanjeev Chandra for his guidance during the course of this project and offering me the great opportunity to prove my potential in the last two years. I am also grateful to Professor Venkat Venkataramance, for his support in project collaboration with the CACT. In the CACT lab, I would like to express my thanks to Dr. Javad Mostaghimi and Dr. Thomas W. Coyle for their consult. and I would also like to express my thanks to Dr. Larry Pershin and Mr. Tiegang Li for their invaluable expertise in thermal spray coatings to help me with the flame and wire-arc spraying.

I would also like to thank Ryan Mendell and the entire MIE machine shop, for their supports of experimental components machining, and to Postdoc Alex Mitrasinovic for his contribution to the experiment design and support in coating characterization, and to all my lab colleagues and friends for their support.

Lastly, I would like to extend a special acknowledgment to my parents and my wife. Their motivations have been the primary reason for my position today. I wish them the greatest health and success in all they do.

UNIVERZITET U BEOGRADU
TEHNIČKI FAKULTET U BORU

Jasmina V. Nešković

Hidratacija novosintetizovanog belitnog
cementa sa mineralnim dodacima

doktorska disertacija

Bor, 2022.

ZAHVALNICA

Doktorska disertacija „Hidratacija novosintetizovanog belitnog cementa sa mineralnim dodacima“ je urađena u Laboratoriji za ispitivanje materijala u kulturnom nasleđu Tehnološkog fakulteta u Novom Sadu i u laboratorijama Rudarskog instituta u Beogradu kojima se ovim putem zahvaljujem na podršci.

Zahvalna sam mentorima na neprocenjivom znanju koje sam stekla tokom izrade ove doktorske disertacije.

Veliku zahvalnost dugujem mentoru prof. dr Miljanu Trumiću na neizmernoj pomoći i podršci u naizgled bezizlaznim situacijama na koje sam nailazila u toku izrade disertacije.

Dragoj profesorici Jonjaui Ranogajec neizmerno se zahvaljujem na usmeravanju u istraživanju, razumevanju, podršci i velikoj posvećenosti tokom višegodišnje saradnje na izradi ove doktorske disertacije kojom je rukovodila kao mentor do odlaska u penziju. Kasnije mi je svojim korisnim savetima i idejama davala novu snagu verujući u mene, ohrabrilala me da istrajem do kraja.

Posebnu zahvalnost dugujem mentorki prof. dr Snežani Vučetić koja je bila uz mene pri svakom eksperimentu, nesebično prenosila znanje i iskustvo, a svojim originalnim idejama usmeravala tok istraživačkog rada. Pružila mi je neiscrpnu pomoć i podršku pri rešavanju mnogih problema sa kojim sam se susretala tokom kompleksnih istraživanja.

Veliku zahvalnost dugujem članovima komisije za ocenu i odbranu doktorske disertacije, posebno prof. dr Maji Trumić, koja mi je izašla u susret kada je to bilo neophodno da u najkraćem roku pregleda disertaciju uz konstruktivne komentare koji su unapredili ovu disertaciju.

Takođe se zahvaljujem dr Ivani Jovanović, višem naučnom saradniku, na uspešnoj saradnji prilikom pisanja naučnog rada tematski vezanog za disertaciju, a koja me je ujedno i uvela u svet konvolucionih neuronskih mreža kao posebne oblasti u okviru istraživanja.

Zahvalnost dugujem dr Aleksandru Mitrašinović na tehničkoj podršci i korisnim konsultacijama koje mi je nesebično pružio.

Na kraju bih se zahvalila svim kolegama, prijateljima i porodicu na strpljenju i podršci kada je to bilo najpotrebnije, i svima ostalima koji nisu spomenuti a na bilo koji način su dali doprinos mom višegodišnjem radu.

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for an easy separation of the oxide components from the Cu foils. The Cu losses due to evaporation or carbide/oxide formation were not detected in the SEM figures although formation Cu-oxides is expected. The volatilization rate is a function of the process temperature and the degradation chemistry of condensed-phase material, both of which may be adjustable through controlling the plasma torch and the reactor operating conditions. Due to specifics of the proposed technology the evaporation of the metallic fragments is not expected, although metal volatilization is expected occurrence in traditional plasma processes. Taylor and Bunce¹¹ explained the advantages of using concentrated enthalpy systems such as the plasma process where increased heat-transfer rates allow melting and solidifying of localized areas in very short time periods. In Figure 4 local melting and softening of fiberglass is recognized although recorded temperatures were below its melting point. Such results indicate high exothermic reaction of the e-waste components that further ease separation of the metallic parts, and fine grinding of the formed oxide residues. However, quantitative analyses of the reactions exothermicity, enthalpy values and consequently total process energy and mass balance required further investigation.

The thickness of the Cu layer before plasma treatment was 51.5 µm. The average thickness of the Cu foil in the middle of the sample after the treatment was 47 µm. This accounts to recovery of 91% of the initial amount of Cu. The highest losses are expected at the edge of the sample. The thickness of the Cu foil at the distance of 1,000 µm from the sample edge was 38 µm. Such losses can be controlled by adjustment of process parameters such as distance between torch and reaction zone, torch power or treatment time.

Energy dispersive spectroscopy analyses of the Cu revealed pure Cu in both treated and no treated sample. Overall

chemical composition of the fiberglass did not change significantly after the treatment (Figure 5, 1 and 4). A slight increase in carbon content is probably acquired due to decomposition of the neighboring binder component. The concentrations of metallic-oxide components in fiberglass are not changed since evaporation of such material is not expected. A high concentration of oxygen indicated the presence of metallic oxide species before and after the thermal plasma treatment. The carbon content in area of binder used in circuit boards is decreased from 60 wt.% to 15 wt.% after the treatment (Figure 5, 4-6). The amount of carbon at about 15 wt.% in all measurements are due to sample carbon coating, therefore EDS results of carbon should be taken only for comparative purposes rather than as concentration values. However, the oxygen content is increased from 25 wt.% to 42 wt.% in binder containing area. A significant difference in oxygen concentration in area close to edge and area in the middle of the sample indicated oxygen intake from the air and its diffusion into the middle of the sample. Such an effect is eased by decomposition of binder and separation of fiberglass layers that allows direct contact of circuit board components with plasma gas and air in the later stages of the treatment. Easily volatilized species used for nonflammable modern circuit boards are expected to evaporate during the process and contribute to off-gas. An interesting result is the high concentration of Br in the middle of the circuit board sample. Bromine either formed complex-nonvolatile species with surrounding elements or could not escape to the surface and evaporate. From an environmental point of view, capturing toxic elements that usually accompany offgas components is beneficial.

CONCLUSIONS

The recovery of Cu from circuit boards using an innovative thermal

plasma treatment is examined. The results showed that the organic material was decomposed completely and contributed to the increase of the syngas energy value. After removal from the plasma reactor, the formed Cu foils in solid residues were easy to separate from the fiber glass and other oxides. Due to low temperatures at the zone of material treatment, evaporation or oxidation of the Cu was negligible. 91 wt.% of the Cu was recovered after the treatment. The achieved results allow one to conclude that all valuable metals with a similar or higher melting point like Cu will be easily recovered after thermal plasma treatment.

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JOM AUTHORS AND ADVISORS

Chen, John J.J. has won the TMS Best Reduction Technology Paper Award (1992, 1993, 1996) and has been on the TMS Light Metals Division Council and the Aluminum Committee. Dr. Chen has been a TMS member for 18 years. *Page 120*.

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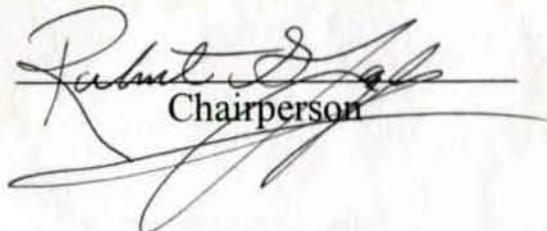


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Датум: 02.02.2017. године

Немањина 22-26

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JK

На основу члана 105б. став 4. Закона о високом образовању („Службени гласник РС”, бр. 76/05, аутентично тумачење – 100/07, 97/08, 44/10, 93/12, 89/13, 99/14, 45/15 – аутентично тумачење и 68/15), члана 192. став 1. Закона о општем управном поступку („Службени гласник СРЈ”, бр. 33/97 и 31/01, „Службени гласник РС”, број 30/10) и члана 23. став 2. Закона о државној управи („Службени гласник РС”, бр. 79/05, 101/07, 95/10 и 99/14), решавајући по захтеву Александра Митрашиновића из Земуна, Република Србија, за признавање високошколске исправе издате у Канади, ради запошљавања,

министар просвете, науке и технолошког развоја доноси

РЕШЕЊЕ

Диплома коју је 09.11.2010. године на име Александар Митрашиновић издао Универзитет у Торонту (University of Toronto), Торонто, Онтарио, Канада, о завршеним докторским академским студијама, студијски програм: Наука о материјалима и инжењерству (Department of Materials Science & Engineering), звање/квалификација: Doctor of Philosophy, признаје се као диплома докторских академских студија трећег степена високог образовања (180 ЕСПБ), у оквиру образовно-научног поља Техничко-технолошких наука, научна, односно стручне области Металуршко инжењерство, ради запошљавања.

Ово решење омогућава имаоцу општи приступ тржишту рада у Републици Србији, али га не ослобађа од испуњавања посебних услова за бављење професијама које су регулисане законом или другим прописом.

Образложење

Овом министарству обратио се Александар Митрашиновић из Земуна, Република Србија захтевом за признавање дипломе Универзитета у Торонту (University of Toronto), Торонто, Онтарио, Канада, о завршеним докторским академским студијама, студијски програм: Наука о материјалима и инжењерству (Department of Materials Science & Engineering), звање/квалификација: Doctor of Philosophy, ради запошљавања.

Уз захтев, подносилац захтева доставио је:

- 1) оверену копију дипломе издате 09.11.2010. године, коју је издао Универзитет у Торонту ((University of Toronto), Торонто, Онтарио, Канада, студије трећег степена високог образовања (180 ЕСПБ), студијски програм Наука о материјалима и инжењерству (Department of Materials Science & Engineering), звање/квалификација: Doctor of Philosophy,
- 2) оверени превод дипломе на српски језик,
- 3) наставни план и програм - истраживачки докторат на српском и италијанском језику,

- 4) уверење о положеном завршном испиту за стицање звања доктора наука на српском и италијанском језику,
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- 10) пријавни формулар и
- 11) доказ о уплати таксе за професионално признавање.

Чланом 105 б. став 4. прописано је да Министар доноси решење о професионалном признавању у року од 90 дана од дана пријема уредног захтева.

Одредбама члана 192. Закона о општем управном поступку прописано је да на основу одлучних чињеница утврђених у поступку орган надлежан за решавање доноси решење у управној ствари која је предмет поступка.

Одредбама члана 23. став 2. Закона о државној управи прописано је да Министар представља Министарство, доноси прописе и решења у управним и другим појединачним стварима и одлучује о другим питањима из делокруга Министарства.

Чланом 104. став 1. Закона о високом образовању, прописано је да признавање стране високошколске исправе јесте поступак којим се имаоцу те исправе утврђује право на наставак образовања, односно на запошљавање. Поступак признавања стране високошколске исправе спроводи се у складу са одредбама овог закона, ако међународним уговором није предвиђено другачије.

Сходно одредбама члана 105. став 1. и 6. Закона о високом образовању и васпитању, ENIC/NARIC центар при Министарству просвете, науке и технолошког развоја, прибавио је релевантне информације о студијском програму на ком је стечена диплома из става 2. тачка 1) образложења овог решења.

У складу са чланом 105. став 4. Закона о високом образовању, комисија коју је именовао министар извршила је прво вредновање студијског програма на коме је стечена диплома из става 2. тачка 1) образложења овог решења, и дала предлог за признавање дипломе ради запошљавања.

Подносилац захтева је доставио доказ о уплати таксе у складу са чланом 2. став 1. Правилника о висини таксе за професионално признавање страних високошколских исправа („Службени гласник РС”, број 83/2015).

Имајући у виду наведено, решено је као у диспозитиву овог решења.

Упутство о правном средству: Ово решење је коначно у управном поступку и против истог може се покренути управни спор. Тужба се подноси Управном суду у року од 30 дана од дана пријема овог решења.

Решење доставити:

- Александар Митрашиновић, ул. Загорска бр. 36, 11080 Земун и
- Архива.



Република Србија
МИНИСТАРСТВО ПРОСВЕТЕ,
НАУКЕ И ТЕХНОЛОШКОГ РАЗВОЈА
Комисија за стицање научних звања

Број: 660-01-00001/242

27.03.2019. године

Б е о г р а д

На основу члана 22. став 2. члана 70. став 4. Закона о научноистраживачкој делатности ("Службени гласник Републике Србије", број 110/05, 50/06 – исправка, 18/10 и 112/15), члана 3. ст. 1. и 3. и члана 40. Правилника о поступку, начину вредновања и квантитативном исказивању научноистраживачких резултата истраживача ("Службени гласник Републике Србије", број 24/16, 21/17 и 38/17) и захтева који је поднео

Институт техничких наука САНУ у Београду

Комисија за стицање научних звања на седници одржаној 27.03.2019. године, донела је

**ОДЛУКУ
О СТИЦАЊУ НАУЧНОГ ЗВАЊА**

Др Александар Мишић
стиче научно звање
Научни сарадник

у области природно-математичких наука - физичка хемија

О Б Р А З Л О Ж Е Њ Е

Институт техничких наука САНУ у Београду

утврдио је предлог број 098/1 од 30.03.2018. године на седници Научног већа Института и поднео захтев Комисији за стицање научних звања број 104/1 од 05.04.2018. године за доношење одлуке о испуњености услова за стицање научног звања *Научни сарадник*.

Комисија за стицање научних звања је по претходној прибављеном позитивном мишљењу Матичног научног одбора за хемију на седници одржаној 27.03.2019. године разматрала захтев и утврдила да именован и испуњава услове из члана 70. став 4. Закона о научноистраживачкој делатности ("Службени гласник Републике Србије", број 110/05, 50/06 – исправка, 18/10 и 112/15), члана 3. ст. 1. и 3. и члана 40. Правилника о поступку, начину вредновања и квантитативном исказивању научноистраживачких резултата истраживача ("Службени гласник Републике Србије", број 24/16, 21/17 и 38/17) за стицање научног звања *Научни сарадник*, па је одлучила као у изреци ове одлуке.

Доношењем ове одлуке именован стиче сва права која му на основу ње по закону припадају.

Одлуку доставити подносиоцу захтева, именованом и архиви Министарства просвете, науке и технолошког развоја у Београду.

ПРЕДСЕДНИК КОМИСИЈЕ

М. Јововић

Др Ђурђина Јововић,
научни саветник

