Dr Fehim Korać, redovni profesor Univerziteta u Sarajevu Prirodno-matematičkog fakulteta, doktor hemijskih nauka, uža naučna oblast: Fizikalna hemija, predsjednik

Dr Igor Pašti, redovni profesor Univerziteta u Beogradu Fakulteta za fizičku hemiju, doktor fizičkohemijskih nauka, uža naučna oblast: Fizikalna hemija – Elektrohemija, član

Dr Safija Herenda, redovna profesorica Univerziteta u Sarajevu Prirodno-matematičkog fakulteta, doktor hemijskih nauka, uža naučna oblast: Fizikalna hemija, član

VIJEĆU UNIVERZITETA U SARAJEVU - PRIRODNO-MATEMATIČKI FAKULTET

Predmet: Izbor NASTAVNIKA u zvanju REDOVNI PROFESOR za oblast Fizikalna hemija na Univerziteta u Sarajevu - Prirodno-matematičkom fakultetu, Odsjek za hemiju - 1 izvršilac sa punim radnim vremenom

Na osnovu člana 69, stav (1) tačka f) i člana 123. Zakona o visokom obrazovanju („Službene novine Kantona Sarajevo“, broj: 36/22), člana 111. tačka i) Statuta Univerziteta u Sarajevu, te prijedloga Vijeća Odsjeka za hemiju od 23.04.2026. godine, Vijeća Univerziteta u Sarajevu - Prirodno-matematičkog fakulteta na elektronskoj 33. sjednice održanoj 07. 05. 2026. godine, Dekan Prirodno-matematičkog fakulteta Univerziteta u Sarajevu, donio je ODLUKU broj 01/06-884/2-2026 od 07.05.2026. godine, kojim smo imenovani u Komisiju za pripremanje prijedloga za izbor NASTAVNIKA u zvanje REDOVNOG PROFESORA za oblast FIZIKALNA HEMIJA Univerziteta u Sarajevu Prirodno-matematičkog fakulteta na Odsjeku za hemiju – 1 izvršilac sa punim radnim vremenom.

Na osnovu uvida u dostavljenu dokumentaciju podnosimo sljedeći

I Z V J E Š T A J

Na raspisani Konkurs objavljen 02. 04. 2026. godine u dnevnom listu “Dnevni Avaz”, na web stranici Prirodno-matematičkog fakulteta i na web stranici Univerziteta u Sarajevu, za izbor NASTAVNIKA u zvanje REDOVNI PROFESOR za oblast FIZIKALNA HEMIJA na Odsjeku za hemiju Prirodno-matematičkog fakulteta Univerziteta u Sarajevu – 1 izvršilac sa punim radnim vremenom, kao jedini kandidat prijavio se dr sc. Sanjin Gutić, vanredni profesor Univerziteta u Sarajevu - Prirodno-matematičkog fakulteta na Odsjeku za hemiju. Potvrdom broj 02/01-723/3-2026 od 12. 05. 2026. godine obavješteni smo od Komisije za prijem prijava na Konkurs, da je prijava prof. dr Sanjina Gutića blagovremena i potpuna u skladu sa uslovima utvrđenim Konkursom.

Uz prijavu na Konkurs, prof dr. Sanjin Gutić je priložio sljedeća dokumenta:

- Izvod iz matične knjige rođenih,
- Uvjerenje o državljanstvu,
- Biografiju
- CV
- Ovjerenu kopiju diplome o sticanju visoke stručne spreme,
- Ovjerenu kopiju diplome o sticanju naučnog stepena magistra nauka,

- Ovjerenu kopiju diplome o sticanju naučnog stepena doktora nauka,
- Ovjerenu kopiju rješenja o nostrifikaciji diplome o sticanju naučnog stepena doktora nauka,
- Bibliografiju,
- Ovjerenu kopiju dokaza o provedenom izbornom periodu u zvanju Vanredni profesor za oblast Fizikalna hemija,
- Dokaz o uspješno obavljenim mentorstvima na II ciklusu studija,
- Dokaz o uspješno obavljenom mentorstvu na III ciklusu studija,
- Dokaze o originalnom stručnom uspjehu - učešću u projektima,
- Listu mentorisanih kandidata II i III ciklusa prije i nakon izbora u trenutno zvanje
- Dokaze o društvenom doprinosu i uključivanju studenata u vannastavne aktivnosti:
    - nagrada Univerziteta u Sarajevu
    - dokazi o učešću u naučnim i organizacionim odborima domaćih konferencija
    - dokazi o učešću u radu udruženja
    - dokazi o aktivnostima vezanim za unaprijeđenje institucije
    - dokazi o aktivnostima vezanim za popularizaciju nauke
    - dokazi o uključivanju studenata u naučno-istraživačke projekte
- Dokaze o učešću u radu komisija za doktorske disertacije
- Dokaze o međunarodnoj saradnji
- Prilog bibliografiji - radovi u naučnim časopisima i zbornicima nakon izbora u trenutno zvanje
- Prilog bibliografiji – univerzitetski udžbenici nakon izbora u trenutno zvanje

1. BIOGRAFSKI PODACI

Biografija – Sanjin Gutić

1.1. Datum i mjesto rođenja

20. 09.1983., Rogatica, Bosna i Hercegovina

1.2. Obrazovanje

2016. Doktor nauka – fizičkohemijske nauke, Univerzitet u Beogradu, Fakultet za fizičku hemiju
Doktorska disertacija: „Primena materijala na bazi grafena u elektrokatalizi i skladištenju energije“
2012. – 2016. Doktorske akademske studije, Univerzitet u Beogradu, Fakultet za fizičku hemiju

2011. Magistar hemijskih nauka, Univerzitet u Sarajevu, Prirodno-matematički fakultet
Magistarski rad: „Ispitivanje stabilnosti polianilinskih prevlaka na visokolegiranom nehrđajućem čeliku“
2007. – 2011. Postdiplomski studij, Univerzitet u Sarajevu, Prirodno-matematički fakultet, Odsjek za hemiju

2007. Diplomirani inženjer hemije, Univerzitet u Sarajevu, Prirodno-matematički fakultet
Diplomski rad: „Spektrofotometrijsko ispitivanje uticaja aktiviteta vode na ravnotežu $[Co(H_2O)_6]^{2+}/[CoCl_4]^{2-}$“
2002. – 2007.
Dodiplomski studij, Univerzitet u Sarajevu, Prirodno-matematički fakultet, Odsjek za hemiju

1.3. Poznavanje stranih jezika

- Engleski, aktivno (ruski i italijanski pasivno).

1.4. Učešća na stručnim seminarima, savjetovanjima i simpozijima

2025. *59th Congress of the European Societies of Toxicology* 14-17 September 2025. Athens, Greece

2024. 9th Regional Symposium on Electrochemistry - South-East Europe, Novi Sad, Serbia

2024. 52nd EEMGS meeting, Arhiv Za Higijenu Rada i Toksikologiju

2022. *XVI International Congress of Toxicology* (2022) S308

2021. *4th International Meeting on Materials Science for Energy Related Applications*, September 22-23, 2021, Belgrade, Serbia

2015. 5th Regional Symposium on Electrochemistry – South-East Europe RSE-SEE 2015, Pravets, Bulgaria – Predavanje po pozivu: Keynote lecture.

2012. VI savjetovanje o reformi visokog obrazovanja, Kontinuitet reforme visokog obrazovanja, Sarajevo, 13. i 14. 04. 2012.

2011. V savjetovanje o reformi visokog obrazovanja - primjena Bolonjskih principa na Univerzitetu u Sarajevu, Daljnji trendovi reforme visokog obrazovanja po Bolonjskim principima, Sarajevo, 14. i 15. 04. 2011.

2010. IV savjetovanje o reformi visokog obrazovanja - primjena Bolonjskih principa na Univerzitetu u Sarajevu, Razvoj sistema upravljanja kvalitetom u visokom obrazovanju, Sarajevo, 16. i 17. 04. 2010.

2009. III savjetovanje Reforma visokog obrazovanja - primjena Bolonjskih principa na Univerzitetu u Sarajevu, 24. i 25. 04. 2009.

1.5. Nagrade i priznanja

2019. Nagrada Univerziteta u Sarajevu za istraživanje i objavljivanje naučnoistraživačkih radova u naučnim časopisima koje registruje baza podataka Web of Science Core Collection za 2018. godinu

1.6. Kretanje u službi

2020 - Vanredni profesor za oblast Fizikalna hemija, Univerzitet u Sarajevu, Prirodno-matematički fakultet

2017 – 2020. Docent za oblast Fizikalna hemija, Univerzitet u Sarajevu, Prirodno-matematički fakultet

2011 – 2017. Viši asistent za oblast Fizikalna hemija, Univerzitet u Sarajevu, Prirodno-matematički fakultet

2008 – 2011. Asistent za oblast Fizikalna hemija, Univerzitet u Sarajevu, Prirodno-matematički fakultet

2007 – 2011. Saradnik na IGCSE Chemistry Syllabus, Prva bošnjačka gimnazija, Sarajevo

2006 – 2007. Demonstrator, Univerzitet u Sarajevu, Prirodno-matematički fakultet, Odsjek za hemiju, Katedra za fizikalnu hemiju

1.7. Profesionalno iskustvo

2018. – Naučni saradnik na projektu: „Primjena različitih vrsta inhibitora korozije na poluindustrijskom postrojenju otvorenog recirkulacionog sistema hlađenja“, Ministarstvo za naučnotehnološki razvoj, visoko obrazovanje i informaciono društvo Republike Srpske; Voditelj projekta: prof. dr Borislav Malinović

2014 – 2017. Stručni saradnik na projektu: „Elektromobilnost“ finansiranog od strane kompanije „Prevent BH“, Visoko, Bosna i Hercegovina

2011 – 2012. Stručni saradnik na projektu: „Prirodno-matematički fakultet – Elektrohemijska laboratorija – Formiranje i instalacija“ finansiranog od strane Federalnog ministarstva obrazovanja i nauke BiH

2011 – 2012. Stručni saradnik na projektu: „Recikliranje plemenitih metala iz industrijskih katalizatora“ finansiranog od strane kompanije „Bazna hemija d.d.“, Goražde, Bosna i Hercegovina

2. RADOVI KANDIDATA

2.1. Radovi u naučnim i stručnim časopisima

Naučni i stručni radovi prije izbora u trenutno zvanje

1. **S.J. Gutić,** A.S. Dobrota, E. Fako, N.V. Skorodumova, N. Lopez, I.A. Pašti, Hydrogen Evolution Reaction-From Single Crystal to Single Atom Catalysts, *Catalysts* 10 (2020) 290
2. **S.J. Gutić**, M. Šabanović, D. Metarapi, I.A. Pašti, F. Korać, S.V. Mentus, Electrochemically Synthesized Ni@reduced Graphene Oxide Composite Catalysts for Hydrogen Evolution in Alkaline Media – the Effects of Graphene Oxide Support, *Int. J. Electrochem. Sci.* 14 (2019) 8532-8543

3. D. Karačić, S. Korać, A.S. Dobrota, I.A. Pašti, N.V. Skorodumova, **S.J. Gutić**, When supporting electrolyte matters – Tuning capacitive response of graphene oxide via electrochemical reduction in alkali and alkaline earth metal chlorides, *Electrochim. Acta* 297 (2019) 112-117
4. R. Georgijević, M. Vujković, **S. Gutić**, M. Aliefendić, D. Jugović, M. Mitrić, V. Đokić, S. Mentus, The influence of synthesis conditions on the redox behaviour of $LiFePO_4$ in aqueous solution, *J. Alloys Compd* 776 (2019) 475-485
5. **S.J. Gutić**, Dž.K. Kozlica, F. Korać, D. Bajuk-Bogdanović, M. Mitrić, V.M. Mirsky, S.V. Mentus and I.A. Pašti, Electrochemical tuning of capacitive response of graphene oxide, *Phys. Chem. Chem. Phys.* 20 (2018) 22698-22709
6. **S.J. Gutić**, A.Z. Jovanović, A.S. Dobrota, D.Metarapi, L.D. Rafailović, I.A. Pašti, S.V. Mentus, Simple routes for the improvement of hydrogen evolution activity of Ni-Mo catalysts: From sol-gel derived powder catalysts to graphene supported co-electrodeposits, *Int. J. Hydrogen Energy* 43 (2018) 16846-16858
7. T. Lazarević-Pašti, V. Anićijević, M. Baljozović, D. Vasić Anićijević, **S. Gutić**, V. Vasić, N.V. Skorodumova and I.A. Pašti, The impact of the structure of graphene-based materials on the removal of organophosphorus pesticides from water, *Environ. Sci.: Nano* 5 (2018) 1482-1494
8. **S.J. Gutić**, A.S. Dobrota, M. Leetmaa, N.V. Skorodumova, S.V. Mentus and I.A. Pašti, Improved catalysts for hydrogen evolution reaction in alkaline solutions through the electrochemical formation of nickel-reduced graphene oxide interface, *Phys. Chem. Chem. Phys.* 19 (2017) 13281-13293
9. **S. Gutić**, M. Cacan, F. Korać, Electrodeposition of polyaniline films on stainless steel and their voltammetric behavior in corrosive environments, *Bull. Chem. Technol. Bosn. Herz.* 48 (2017) 45–50**.**
10. **Sanjin Gutić**, Ana S. Dobrota, Nemanja Gavrilov, Miloš Baljozović, Igor A. Pašti, Slavko V. Mentus, Surface Charge Storage Properties of Selected Graphene Samples in pH-neutral Aqueous Solutions of Alkali Metal Chlorides - Particularities and Universalities, *Int. J. Electrochem. Sci.* 11 (2016) 8662 – 8682
11. Ana S. Dobrota, **Sanjin Gutić**, Ana Kalijadis, Miloš Baljozović, Slavko V. Mentus, Natalia V. Skorodumova, and Igor A. Pašti, Stabilization of alkali metal ions interaction with OH-functionalized graphene via clustering of OH groups – implications in charge storage applications, *RSC Adv*., 2016, 6, 57910
12. Nuhanović M., Pehlić E., Čišija V., **Gutić S.** „Effect of Ultrasound on Biodiesel Synthesis from Plant Oil“ Glasnik hemičara i tehnologa Bosne i Hercegovine, *Bulletin of the Chemists and Technologists of Bosnia and Herzegovina*, 46 (2016), p 13-18
13. N. Halilović, **S. Gutić**, F. Korać, N. Avdić, Interpretation of results obtained from test purification of wastewater with zinc electrodes, *Glasnik hemičara i tehnologa Bosne i Hercegovine*, Bulletin of the Chemists and Technologists of Bosnia and Herzegovina, 45 (2015) 51-56
14. Dž. Kozlica, F. Korać, **S. Gutić**, Graphite, Graphite Oxide, Graphene Oxide, and Reduced Graphene Oxide as Active Materials for Electrochemical Double Layer Capacitors: A comparative Study, *Glasnik hemičara i tehnologa Bosne i Hercegovine, Bulletin of the Chemists and Technologists of Bosnia and Herzegovina*, 45 (2015), 35-38
15. N. Karaman, M. Aliefendić, S. Pljuco, Dž. Kozlica, N. Nalić, F. Korać, **S. Gutić**, Solid state synthesis and characterization of $LiFePO_4$/C as cathode material for Li-ion batteries, Glasnik hemičara i tehnologa Bosne i Hercegovine, *Bulletin of the Chemists and Technologists of Bosnia and Herzegovina* 45 (2015) 19-22

16. S. Ličina, J. Ostojić, **S. Gutić**, M. Cacan, Influence of chloride ions on corrosion resistance of Zinc coating, *Glasnik hemičara i tehnologa Bosne i Hercegovine, Bulletin of the Chemists and Technologists of Bosnia and Herzegovina* 44 (2015) 33-38
17. F. Korać, **S. Gutić**, I. Zukić, J. Ostojić, S. Herenda, S. Gojak-Salimović, Anticorrosion Performance of eco-friendly Paint Coatings, *Glasnik hemičara i tehnologa Bosne i Hercegovine, Bulletin of the Chemists and Technologists of Bosnia and Herzegovina* 41 (2013) 37-47
18. S. Islamović, F. Korać, J. Ostojić, M. Kezo, **S. Gutić**, L. Koštroman i A. Halilović, Korozijske karakteristike sirovog i eloksiranog aluminija. *Kem. Ind*. 62(7-8) (2013) 241–246
19. J. Ostojić, S. Gojak-Salimović, F. Korać, **S. Gutić,** S. Islamović, Influence of Monomer Concentration on Capability of Voltammetric Polypyrrole Based Cation Sensor Using Modified Butler-Volmer Equation, *Glasnik hemičara i tehnologa Bosne i Hercegovine, Bulletin of the Chemists and Technologists of Bosnia and Herzegovina*, 40 (2013) 21-24
20. F. Korać, **S. Gutić**, I. Semić, I. Kozica, S. Gojak, S. Islamović, J. Ostojić, Electrochemical characteristics of welded joints on stainless steel in maritime Atmosphere, *Glasnik hemičara i tehnologa Bosne i Hercegovine, Bulletin of the Chemists and Technologists of Bosnia and Herzegovina*, 38 (2012) 19-24
21. F. Korać, S. Ćatić, M. Cacan, **S, Gutić**, S. Islamović, Tačkasta korozija ortopedskog implantata u fiziološkim rastvorima, *Zaštita materijala* 51(2) (2010) 99 – 103

Naučni radovi nakon izbora u trenutno zvanje

22. **S.J. Gutić**, K. Hrvat, NiMo Electrodeposition for Hydrogen Evolution: Some Considerations in Anode Material and Geometry Selection, *Bulletin of the Chemists and Technologists of Bosnia and Herzegovina* (2026) in press

    The development of platinum group metal (PGM)-free electrocatalysts for alkaline water electrolysis requires not only high intrinsic activity but also scalable and reproducible fabrication strategies. Here, we investigate the electrodeposition of NiMo onto graphene paper (GP) under conditions of high cathode-to-anode geometric area ratio, with particular emphasis on the influence of counter electrode material and cell geometry on deposit uniformity and hydrogen evolution reaction (HER) performance. Nickel and platinum anodes, significantly smaller than the cathode and positioned opposite its central region, were employed to evaluate spatial variations in morphology, composition, loading, and electrochemical behavior. For all deposition conditions, measurable differences between central and edge regions were observed in terms of NiMo loading, morphology, and electrochemical response, confirming the strong influence of electric field distribution. These findings demonstrate that electrodeposition cell design, including counter electrode material, geometry, and current distribution, critically determines catalyst uniformity and apparent activity. For scalable fabrication of NiMo-based cathodes careful control of electric field homogeneity is essential to ensure reproducibility.

23. T. Ćetković Pećar, A. Haverić, S. Haverić, **S.J. Gutić**, Understanding MTT–Graphene Oxide Interactions for Accurate Viability Measurements, *Bulletin of the Chemists and Technologists of Bosnia and Herzegovina* 66 (2026) 13-21

    Large surface enriched with oxygen-containing groups, enabling interactions with various molecules, makes graphene oxide (GO) valuable in sensing, imaging, and therapy but complicates cytotoxicity assessment using standard colorimetric assays. In this study we examined adsorption of tetrazolium (MTT) ion, used as a dye in colorimetric assay, on GO. Using a cell-free system, adsorption behavior was modelled with Freundlich, Langmuir, and Langmuir–Freundlich (Sips) isotherms. Satisfactory fits were obtained by all models. However, the Sips model provided the best nonlinear regression performance, while Langmuir fit best under linear regression. π–π interactions between MTT and the GO aromatic rings were discussed as the most probable driving force for the adsorption. Interactions between GO and components of the culture medium (DMEM) and serum (FBS) were indirectly observed by comparing MTT monolayer capacity values with the values obtained in aqueous MTT solutions. The results confirm that GO interactions with MTT, responsible for the interferences, can be described quantitatively in the presence of cell supporting medium and that corrective adjustments of the colorimetric assay results may be required, yet the question remains whether such corrections can be applied in practice. The present study provides an initial foundation for assessing their feasibility.

24. I. Durmišević, A. Haverić, S. Žabkar, A. Štern, K. Kološa, P. Jenuš Belec, T. Ćetković Pećar, M. Hadžić Omanović, **S. Gutić**, I. Rozman, S. Haverić, B. Žegura, In vitro toxicity assessment of graphene quantum dots using a 3D HepG2 model, *Archives of Toxicology* (2026),

In the present study, two types of graphene quantum dots (GQDs) were investigated: green-emitting (G-GQDs) and blue-emitting (B-GQDs). Physicochemical characterisation was performed using transmission electron microscopy (TEM), zeta potential, and hydrodynamic radius measurements to evaluate the morphology, particle size, aggregation behaviour, and colloidal stability of the GQDs in both water and cell culture medium. G-GQDs exhibited superior colloidal stability and more uniform dispersion than B-GQDs, whereas both types showed reduced aggregation and surface charge in cell culture medium due to protein corona formation. Toxicological characterisation was performed using an in vitro human hepatocellular carcinoma (HepG2) 3D spheroid model, with GQDs exposures up to 250 µg/mL (100 µg/cm2). Cytotoxicity was measured using the CellTiter-Glo luminometric assay, while genotoxicity was evaluated by the comet assay and flow cytometric analysis of γH2AX and phosphorylated histone H3 (p-H3) after 24 h of exposure. Both GQDs induced dose-dependent cytotoxic effects in HepG2 spheroids. At non-cytotoxic concentrations, a dose-dependent increase in DNA damage was observed, as determined by the comet assay. However, no evidence of DNA double-strand breaks (γH2AX) or elevated p-H3 levels was detected, suggesting the absence of clastogenic and aneugenic activity. The observed DNA single-strand breaks may be partly attributed to reactive oxygen species induction. These results indicate that, although GQDs induced cytotoxicity and single-strand DNA damage, no clear evidence of more severe genotoxic effects was observed under the tested conditions. Further studies are warranted to elucidate underlying mechanisms and comprehensively assess the safety profile of GQDs for biomedical applications.

25. V.J. Anićijević, T. Tasić, V. Milanković, R. Karkalić, **S. Gutić**, B. Babić, I.A. Pašti, T. Lazarević-Pašti, Removal of organophosphate pesticides from real water samples by adsorption to nitrogen-doped carbon cryogels, *Proceedings of the 8th Workshop: Food and Drug Safety and Quality* (2024) 67-70, DOI: 10.46793/8FDSQ.PB2VA

Effective removal of various pollutants from the environment has become one of the most important challenges of modern society. Carbon cryogels doped with nitrogen were synthesized and characterized using FTIR. All investigated materials have similar composition and structural disorder. The application of carbon cryogels doped with nitrogen for adsorption from tap water with the addition of OP pesticides gave successful results in stationary and dynamic conditions. Stationary conditions showed successful removal of aliphatic dimethoate and malathion for all tested materials, but they were less effective for aromatic chlorpyrifos. Under dynamic conditions, all materials effectively removed malathion and chlorpyrifos while showing suboptimal performance for dimethoate adsorption. The demonstrated efficiency indicates the potential application of these materials in water treatment. The toxicity of these pesticide solutions decreases over time, indicating that no more toxic products are formed.

26. **S.J. Gutić**, D. Metarapi, A.Z. Jovanović, G.K. Gebremariam, A.S. Dobrota, B. Nedić Vasiljević, I.A. Pašti, Redrawing HER Volcano with Interfacial Processes—The Role of Hydrogen Spillover in Boosting H2 Evolution in Alkaline Media, *Catalysts* 13 (2023) 89

The requirements for the efficient replacement of fossil fuel, combined with the growing energy crisis, places focus on hydrogen production. Efficient and cost-effective electrocatalysts are needed for H2 production, and novel strategies for their discovery must be developed. Here, we utilized Kinetic Monte Carlo (KMC) simulations to demonstrate that hydrogen evolution reaction (HER) can be boosted via hydrogen spillover to the support when the catalyst surface is largely covered by adsorbed hydrogen under operating conditions. Based on the insights from KMC, we synthesized a series of reduced graphene-oxide-supported catalysts and compared their activities towards HER in alkaline media with that of corresponding pure metals. For Ag, Au, and Zn, the support effect is negative, but for Pt, Pd, Fe, Co, and Ni, the presence of the support enhances HER activity. The HER volcano, constructed using calculated hydrogen binding energies and measured HER activities, shows a positive shift of the strong binding branch. This work demonstrates the possibilities of metal–support interface engineering for producing effective HER catalysts and provides general guidelines for choosing novel catalyst–support combinations for electrocatalytic hydrogen production.

27. D. Karačić, **S.J. Gutić**, B. Vasić, V.M. Mirsky, N.V. Skorodumova, S.V. Mentus, I.A. Pašti, Electrochemical reduction of thin graphene-oxide films in aqueous solutions – Restoration of conductivity, *Electrochimica Acta* 410 (2022) 140046

Graphene oxide finds applications in different fields of science, including energy conversion. Electrochemical reduction of graphene oxide (GO) significantly improves its conductivity. However, the kinetics of this process depends on the solvent, supporting electrolyte, pH, and numerous other factors. Most studies report the macroscopic views and ex-situ properties of reduced GO. To expand the knowledge about GO reduction, in this study, we used cyclic voltammetry (CV), simultaneous 2 points and 4 points resistance measurement (s24), conductive atomic force microscopy (AFM), and theoretical calculations. Using CV, we demonstrated that the choice of supporting electrolyte (KCl or LiCl) influences the potential range in which electrochemical GO reduction occurs. The activation energy of this process was estimated to be below 30 kJ mol^{-1} in both electrolytes, being significantly lower than that required for thermal reduction of GO. Simultaneous in situ s24 resistance measurements suggest that GO films reach a highly

conductive state at deep negative potentials, with an abrupt, irreversible switch from non-conductive to the conductive state. However, conductive AFM presents a more exact picture of this process: the reduction of GO films starts locally while the formed conductive islands grow during the reduction. This mechanism was confirmed by theoretical calculations indicating that the reduction starts on isolated oxygen-functional groups over the GO basal plane, while clustered OH groups are more difficult to reduce. The presented results can help in tailoring reduced GO for a particular electrochemical application by precisely controlling the reduction degree and percentage of the conductive area of the reduced GO films.

28. L.D. Rafailović, A.Z. Jovanović, **S.J. Gutić**, J. Wehr, C. Rentenberger, T.Lj. Trišović, I.A. Pašti, New Insights into the Metallization of Graphene-Supported Composite Materials – from 3D Cu-Grown Structures to Free-Standing Electrodeposited Porous Ni Foils, *ACS Omega* 7 (2022) 4352-4362

    The conductivity and the state of the surface of supports are of vital importance for metallization via electrodeposition. In this study, we show that the metallization of a carbon fiber-reinforced polymer (CFRP) can be carried out directly if the intermediate graphene oxide (GO) layer is chemically reduced on the CFRP surface. Notably, this approach utilizing only the chemically reduced GO as a conductive support allows us to obtain insights into the interaction of rGO and the electrodeposited metal. Our study reveals that under the same contact current experimental conditions, the electrodeposition of Cu and Ni on rGO follows significantly different deposition modes, resulting in the formation of three-dimensional (3D) and freestanding metallic foils, respectively. Considering that Ni adsorption energy is larger than Ni cohesive energy, it is expected that the adhesion of Ni on rGO@CFRP is enhanced compared to Cu. In contrast, the adhesion of deposited Ni is reduced, suggesting diffusion of H^+ between rGO and CFRP, which promotes the hydrogen evolution reaction (HER) and results in the formation of free-standing Ni foils. We ascribe this phenomenon to the unique properties of rGO and the nature of Cu and Ni deposition from electrolytic baths. In the latter, the high adsorption energy of Ni on defective rGO along with HER is the key factor for the formation of the porous layer and free-standing foils.

29. M. Dedić, **S. Gutić,** A. Gičević, E. Bečić, B. Imamović, D. Marković, N. Žiga-Smajić, Application of membrane filters in determination of the adsorption of tetracycline hydrochloride on graphene oxide, *Pharmacia* 67(4) (2020) 339-345

    This paper shows the use of membrane filters in adsorption of solution of tetracycline hydrochloride on graphene materials. The adsorption process was monitored at different wavelengths, different pH values at certain time intervals. The absorbances of the solutions were measured by UV-Vis spectrophotometry at two wavelengths (275 nm and 356 nm), and three pH values (pH 4, pH 7 and pH 10) every 90 minutes for 6 hours of monitoring, with constant stirring in an ultrasonic bath. The results showed decrease in absorbance at both wavelength and in all three pH values which proved the adsorption of tetracycline hydrochloride on GO and rGO. The largest decrease in absorbance was 98.1%. The most suitable pH value for adsorption was pH 4. This paper used a unique approach to filtration through membrane filters, which in the future could lead to the development of membrane filters based on graphene materials.

Konferencijska saopštenja prije izbora u trenutno zvanje

1. T. Ćetković, **S. Gutić**, A. Haverić, M. Hadžić, S. Haverić, Cytotoxicity evaluation of highly oxidized graphene on peripheral blood mononuclear cells, 1st Congress of Geneticists in Bosnia and Herzegovina with International Participation, October 2019, Sarajevo, Book of Abstracts, p 62, ISSN 2566-2937
2. **S.J. Gutić**, I.A. Pašti, M. Šabanović, D. Metarapi, Promotion role of the reduced graphene oxide in electrolytic hydrogen production, XII Savjetovanje hemičara, tehnologa i ekologa Republike Srpske, 02.-03.11.2018, Teslić, Bosna i Hercegovina, The Book of Abstracts, p 6, ISBN 978-99938-54-72-2
3. S.J. Gutić, I.A. Pašti, A.S. Dobrota, Graphene materials in energy storage and conversion systems – „low-quality“ for high performance, Physics Conference in Bosnia and Herzegovina, 25.-26. oktobar 2018,
4. T. Lazarević-Pašti, **S. Gutić**, I. Pašti, Graphene-based materials for removal of organophosphate pesticides from drinking water, Physical Chemistry 2018 - 6th Workshop: Specific Methods for

Food Safety and Quality, 27. septembar 2018, Beograd, Srbija, Proceedings, pp 151 – 154, ISBN 978-86-7306-148-1

5. **S.J. Gutić**, S. Sopčić, I.A. Pašti, The nature of reduced graphene oxide capacitance from scan rate dependeces: advantages and issues, Physical Chemistry 2018 – 3rd International Meeting on Materials Science for Energy Related Applications, September 25-26, 2018, Belgrade, Serbia, Book of Abstracts, pp 21-22, ISBN 978-86-82139-72-0
6. D. Karačić, S. Korać, I.A. Pašti, D. Sačer, **S.J. Gutić**, Alkali metal cations in electrochemical reduction of graphene oxide: effects on capacitive performance, Physical Chemistry 2018 – 3rd International Meeting on Materials Science for Energy Related Applications, September 25-26, 2018, Belgrade, Serbia, Book of Abstracts, pp 24-25, ISBN 978-86-82139-72-0
7. A. Hrnjić, S. Marinković, I.A. Pašti, **S.J. Gutić**, Palladium/reduced graphene oxide composites as electrocatalysts in electrochemical water splitting, Physical Chemistry 2018 – 3rd International Meeting on Materials Science for Energy Related Applications, September 25-26, 2018, Belgrade, Serbia, Book of Abstracts, p 99, ISBN 978-86-82139-72-0
8. S. Marinković, A. Hrnjić, I.A. Pašti, **S.J. Gutić**, Enhancing performance of rGO/Zn hybrid electrochemical capacitor by controlled potential reduction of graphene oxide, Physical Chemistry 2018 – 3rd International Meeting on Materials Science for Energy Related Applications, September 25-26, 2018, Belgrade, Serbia, Book of Abstracts, p 100, ISBN 978-86-82139-72-0
9. M. Šabanović, D. Metarapi, I.A. Pašti, **S.J. Gutić**, Electrocatalytic behavior of pulse-deposited nickel/reduced graphene oxide composites, Physical Chemistry 2018 – 3rd International Meeting on Materials Science for Energy Related Applications, September 25-26, 2018, Belgrade, Serbia, Book of Abstracts, p 103, ISBN 978-86-82139-72-0
10. D. Karačić, S. Korać, I.A. Pašti, **S.J. Gutić**, Elektrokemijska kontrola kapacitivnih svojstava reduciranog grafen oksida u vodenim elektrolitima, 5. Dan elektrokemije & 8th ISE Satellite Student Regional Symposium on Electrochemistry, May 25, 2018, Zagreb, Croatia, Book of Abstracts, p 5, ISBN 978-953-6894-65-9
11. **S.J. Gutić**, I.A. Pašti, A.S. Dobrota, D. Metarapi, Reducirani grafen oksid – aktivni nosač za elektrokatalizatore, 5. Dan elektrokemije & 8th ISE Satellite Student Regional Symposium on Electrochemistry, May 25, 2018, Zagreb, Croatia, Book of Abstracts, p 38, ISBN 978-953-6894-65-9
12. **S.J. Gutić**, I.A. Pašti, A.S. Dobrota, F. Korać, D. Metarapi, N. Oprašić, Promotion effects of reduced graphene oxide on catalytic properties of nickel towards the hydrogen evolution, 6th Regional Symposium on Electrochemistry – South-East Europe, June 11-15, 2017, Balatonkenese, Hungary, Book of Abstracts, pp 63, ISBN 978-615-5270-33-8
13. T. Lazarević-Pašti, V. Anićijević, D. Vasić-Anićijević, S. Gutić, I. Pašti, V. Vasić, Multidisciplinary approach to the analysis of organophosphate pesticides removal from water using graphene-based nanomaterials, Optical NanoSpectroscopy IV, 28.-31. mart 2017, Lisabon, Portugal, Abstract book
14. Ana S. Dobrota, **Sanjin Gutić**, Igor A. Pašti, Natalia V. Skorodumova, „Clustering of OH groups for enhanced charge storage“, Fifteenth Young Researchers Conference – Materials Science and Engineering, December 7-9, 2016, Belgrade, Serbia, The Book of Abstracts, pp 26, ISBN 978-86-80321-32-5
15. **Sanjin Gutić**, „Sinteza i ispitivanje elektrohemijskog ponašanja nekih katodnih materijala za litijum jonske baterije na bazi vanadijuma i željeza“, XI Conference of Chemists, Technologists

and Environmentalists of Republic of Srpska, November 18-19, 2016, Teslić, Bosnia and Herzegovina, The Book of Abstracts, pp 24, ISBN 978-99938-54-66-1

16. Saša Pljuco, Fehim Korać, Dževad Kozlica, **Sanjin Gutić**, „Synthesis and Electrochemical Performance of $Li_3V_2(PO_4)_3$/C Based Materials in Non-aqueous Electrolyte“, 2nd International Congress of Chemists and Chemical Engineers of Bosnia and Herzegovina, October 21-23, 2016, Sarajevo, Bosnia and Herzegovina, Book of Abstracts – Special Issue of Bulletin of the Chemists and Technologists of Bosnia and Herzegovina, pp 24, Print ISSN: 0367-4444, Online ISSN: 2232-7266
17. Dževad Kozlica, Saša Pljuco, Dino Metarapi, Fehim Korać, **Sanjin Gutić**, „The Effect of Natural Graphite Pretreatment on Electrochemical Behavior of Graphene Oxide“, 2nd International Congress of Chemists and Chemical Engineers of Bosnia and Herzegovina, October 21-23, 2016, Sarajevo, Bosnia and Herzegovina, Book of Abstracts – Special Issue of Bulletin of the Chemists and Technologists of Bosnia and Herzegovina, pp 23, Print ISSN: 0367-4444, Online ISSN: 2232-7266
18. Safija Herenda, Fehim Korać, **Sanjin Gutić**, Emir Kalem, „Uticaj vremena eksploatacije rastvora za pasivaciju na kvalitet pasiviranih cinčanih prevlaka“, Third International Symposium on Corrosion and Protection of Materials and Environment, October 12-15, 2016, Bar, Montenegro, Proceedings, pp 271-276, ISBN 978-9940-9334-2-5
19. **Sanjin Gutić**, Ana S. Dobrota, Igor A. Pašti, „Simultaneous Electrochemical Reduction of Graphene Oxide and Deposition of Nickel: Effect of Reduction Time on Catalytic Properties Towards the Hydrogen Evolution Reaction“, Physical Chemistry 2016 – 2nd International Meeting on Materials Science for Energy Related Applications, September 29-30, 2016, Belgrade, Serbia, Book of Abstracts, pp 65-68, ISBN 978-86-82139-62-1
20. Igor A. Pašti, Ana S. Dobrota, Nemanja S. Gavrilov, **Sanjin Gutić**, Natalia V. Skorodumova, Slavko V. Mentus, „First Principles Insights in Graphene Functionalization for Energy Conversion Applications“, Physical Chemistry 2016 – 13th International Conference on Fundamental and Applied Aspects of Physical Chemistry, September 26-30, 2016, Belgrade, Serbia, Proceedings, Volume I, pp 29-36, ISBN 978-86-82475-34-7
21. **Sanjin Gutić**, Ana S. Dobrota, Ana Kalijadis, Miloš Baljozović, Slavko V. Mentus, Natalia V. Skorodumova, Igor A. Pašti, „Interactions of alkali metal ions with OH-functionalized graphene – DFT studies and some experimental evidence“, 6th ISE Satellite Student Regional Symposium on Electrochemistry, July 8, 2016, Zagreb, Croatia, Book of Abstracts, pp 16, ISBN 978-953-6470-73-0
22. Zerina Bešić, Nedžla Đokić, Safija Herenda, Jelena Ostojić, **Sanjin Gutić**, Lejla Klepo, „Imobilizacija peroksidaze na GC elektrodi“, XI. Susret mladih kemijskih inženjera, 18-19. 2. 2016, Zagreb, Croatia, Knjiga sažetaka, pp 109, ISBN 978-953-6894-55-0
23. Saša Pljuco, Nejra Karaman, Dževad Kozlica, Nađa Nalić, **Sanjin Gutić**, „Sinteza i elektrokemijske osobine $Li_3V_2(PO_4)_3$/C kao katodnog materijala za litijum ionske baterije“, XI. Susret mladih kemijskih inženjera, 18-19. 2. 2016, Zagreb, Croatia, Knjiga sažetaka, pp 94, ISBN 978-953-6894-55-0
24. Dževad Kozlica, Nejra Karaman, Saša Pljuco, Fehim Korać, **Sanjin Gutić**, „Sinteza i elektrokemijsko ispitivanje kondenzatorskih osobina redukovanog grafen oksida u vodenim elektrolitima“, XI. Susret mladih kemijskih inženjera, 18-19. 2. 2016, Zagreb, Croatia, Knjiga sažetaka, pp 84, ISBN 978-953-6894-55-0

25. Nejra Karaman, Saša Pljuco, Nađa Nalić, Dževad Kozlica, **Sanjin Gutić**, „Sinteza i ispitivanje elektrokemijskih osobine $LiFePO_4$/C kao katodnog materijala za Li-ionske baterije“, XI. Susret mladih kemijskih inženjera, 18-19. 2. 2016, Zagreb, Croatia, Knjiga sažetaka, pp 82, ISBN 978-953-6894-55-0
26. Namir Halilović, Borislav Malinović, **Sanjin Gutić**, Fehim Korać, Nurudin Avdić „Electrochemical Treatment of Leader Industry Wastewater“, 5th Regional Symposium on Electrochemistry – South-East Europe, June 7-11, 2015, Pravets, Bulgaria, Book of Abstracts, pp 139, ISBN 978-954-92483-4-0
27. **Sanjin Gutić** „Electrochemistry of Self-Doped Polyanilines in Neutral and Alkaline Media“, 5th Regional Symposium on Electrochemistry – South-East Europe, June 7-11, 2015, Pravets, Bulgaria, Book of Abstracts, pp 15, ISBN 978-954-92483-4-0
28. **Sanjin Gutić**, Fehim Korać, Said Delić, Marko Jukić, Enida Hošić, „Electrochemical Synthesis and Study of Polyanilines with Covalently Attached Acidic Groups“, Congress of Chemists and Chemical Engineers of Bosnia and Herzegovina with International Participation, October 10-12, 2014, Sarajevo, Bosnia and Herzegovina, Book of Abstracts – Special Issue of Bulletin of the Chemists and Technologists of Bosnia and Herzegovina, pp 17, Print ISSN: 0367-4444, Online ISSN: 2232-7266
29. Fehim Korać, **Sanjin Gutić**, Said Delić, Ivana Golubović, Lejla Sprečo, „Elektrohemijska sinteza polianilina na zlatnim supstratima modifikovanim 2-merkaptoproionskom kiselinom“, XVI YuCorr International Conference, May 27-30, 2014, Tara Mountain, Serbia, Book of Abstracts, pp 68, ISBN 978-86-82343-20-2
30. Said Delić, Marko Jukić, Enida Hošić, **Sanjin Gutić**, „Elektrohemijska svojstva karboksilnom grupom dopiranih polianilina pri različitim pH vrijednostima“, X. Susret mladih kemijskih inženjera, 20-21.02.2014, Zagreb, Croatia, Book of Abstracts, pp 145, ISBN 978-953-6470-65-5
31. Tibor Jurčić, Fehim Korać, **Sanjin Gutić**, Safija Islamović, Jelena Ostojić, Sabina Gojak, „Modification of Corrosion Behavior of Iron by Spin-Coated Polyaniline“, Second International Symposium on Corrosion and Protection of Materials and Environment, October 17-20, 2012, Bar, Montenegro, Proceedings, pp 163-167
32. Safija Islamović, Fehim Korać, Jelena Ostojić, Mersiha Kezo, **Sanjin Gutić**, Lucija Koštroman, Amira Halilović „Corrosion Characteristics of Aluminum in Conditions of Exploitation“, IX. Susret mladih kemijskih inženjera, 16-17. 2. 2012, Zagreb, Croatia, Knjiga sažetaka, ISBN 978-953-6894-45-1
33. Inesa Semić, Jelena Ostojić, **Sanjin Gutić**, Fehim Korać, Sanja Ćavar „Corrosion Characteristics of Aluminum in Conditions of Exploitation“, IX. Susret mladih kemijskih inženjera, 16-17. 2. 2012, Zagreb, Croatia, Knjiga sažetaka, pp 168, ISBN 978-953-6894-45-1
34. Jelena Ostojić, Safija Islamović, Fehim Korać, **Sanjin Gutić**, Nadir Džananović, Merima Begović „Corrosion Behavior of Aluminum in the Presence of an Aqueous Extract of *Hibiscus syriacus L Malvaceae*“, IX. Susret mladih kemijskih inženjera, 16-17. 2. 2012, Zagreb, Croatia, Knjiga sažetaka, pp 155, ISBN 978-953-6894-45-1
35. Indira Kozica, Fehim Korać, Merzuk Cacan, **Sanjin Gutić**, Sabina Gojak, Safija Islamović, Jelena Ostojić, „Corrosion of Welded Joints on Stainless Steel in Public Indoor Swimming Pool Buildings“, XIII YuCorr International Conference, April 5-8, 2011, Tara Mountain, Serbia, Book of Abstracts, pp 370-377, ISBN 978-86-82343-15-8
36. Ale Muslimović, Merzuk Cacan, Fehim Korać, Sabina Gojak, Jelena Ostojić, **Sanjin Gutić**, Safija Islamović, „Chemical and Electrochemical Synthesis of Polyaniline in Sulfuric Acid“, XIII YuCorr

International Conference, April 5-8, 2011, Tara Mountain, Serbia, Book of Abstracts, pp 298, ISBN 978-86-82343-15-8

37. Jelena Ostojić, Merzuk Cacan, Fehim Korać, Sabina Gojak, Safija Islamović, **Sanjin Gutić**, „The Influence of Chloride Ions Concentration on the Corrosion Behaviour of Galvanized Water Pipes“, First International Symposium on Corrosion and Protection of Materials and Environment, November 23-26, 2010, Bar, Montenegro, Proceedings, pp 173-176
38. Fehim Korać, Merzuk Cacan, Sabina Gojak, Safija Islamović, **Sanjin Gutić**, Jelena Ostojić, „Corrosion Behavior of Stainless Steel Orthopedic Implants and Alloying Metals in Simulated Physiological Conditions“, First International Symposium on Corrosion and Protection of Materials and Environment, November 23-26, 2010, Bar, Montenegro, Proceedings, pp 167-172
39. Merzuk Cacan, Ida Velić, Rialda Kurtić; Samra Šukalo, **Sanjin Gutić**, „Concentration Galvanic Elements in Mixed Solvents DMF-H_2O, DMSO-H_2O, 1-Propanol-H_2O and 2-Propanol-H_2O“, IX Savjetovanje hemičara i tehnologa Republike Srpske, 12-13. novembar 2010, Banja Luka, Bosna i Hercegovina, Zbornik izvoda radova, pp 34
40. Safija Islamović, Merzuk Cacan, **Sanjin Gutić**, Fehim Korać, „Electrochemical Characterization of Metal Disinfectant“, XII YuCorr International Conference, May 18-21, 2010, Tara Mountain, Serbia, Book of Abstracts, pp 186-187, ISBN 978-86-82343-13-4
41. **Sanjin Gutić**, Merzuk Cacan, Safija Islamović, Fehim Korać, „Electrochemical Synthesis and Anticorrosion Performances of Polyaniline Coatings – Effect of Electrolyte Composition“, XII YuCorr International Conference, May 18-21, 2010, Tara Mountain, Serbia, Book of Abstracts, pp 184-185, ISBN 978-86-82343-13-4
42. Merzuk Cacan, **Sanjin Gutić**, Sabina Gojak, Safija Islamović, Fatima Lutvić, „The Effect of Polyaniline Coating on Corrosion Characteristics of Steel with High Chromium Contents“, VIII Naučno/stručni simpozijum sa međunarodnim učešćem - Metalni i nemetalni materijali – proizvodnja-osobine-primjena, April 2010, Zenica, Bosna i Hercegovina, Proceedings, ISBN 978-9958-785-18-4
43. Merzuk Cacan, Safija Islamović, Sabina Gojak, **Sanjin Gutić**, „Corrosion of Surgical Instruments in Antiseptic Funds“, VIII Naučno/stručni simpozijum sa međunarodnim učešćem - Metalni i nemetalni materijali – proizvodnja-osobine-primjena, April 2010, Zenica, Bosna i Hercegovina, Proceedings, ISBN 978-9958-785-18-4
44. **Sanjin Gutić**, Safija Islamović, Sabina Gojak, Merzuk Cacan, „Electrochemical Properties and Anticorrosive Performances of Polyaniline Thin Films on Steel with High Chromium Content“, VIII. Susret mladih kemijskih inženjera, 18-19. 2. 2010, Zagreb, Croatia, Knjiga sažetaka, pp 124, ISBN 978-953-6470-48-8
45. Merzuk Cacan, Safija Islamović, Sabina Gojak, **Sanjin Gutić**, „Corrosion of Medical Instruments in Physiological Solution“, VIII. Susret mladih kemijskih inženjera, 18-19. 2. 2010, Zagreb, Croatia, Knjiga sažetaka, pp 121, ISBN 978-953-6470-48-8

Konferencijska saopštenja nakon izbora u trenutno zvanje

46. **S.J. Gutić**, Corrosion, Electrocatalysis, Biofilms: The Role of Local Electrochemistry in Materials Science, *Materials & Technologies/Materiali in Tehnologije* 59(5) (2025) p41

47. **S.J. Gutić**, Localized Electrochemical Techniques – Innovation Driver or Routine Workhorse?, *5th International Meeting on Materials Science for Energy Related Applications – Book of Abstracts* (2025) p11
48. T. Ćetković Pećar, S. Haverić, I. Durmišević, M. Hadžić Omanović, **S. Gutić**, S. Ćurovac, I. Mujković, A. Haverić, Thermal Modification of Graphene Oxides: A Toxicity Study in Human Bronchial Epithelial Cells (BEAS-2B), *Toxicology Letters Special Issue: Abstracts of the 59th Congress of the European Societies of Toxicology* 411 (2025) S273-S274
49. **S.J. Gutić**, Scalable electrochemical strategies for preparation of supported catalysts for electrochemical energy conversion, 9th Regional Symposium on Electrochemistry - South-East Europe, Novi Sad, Serbia, Book of Abstracts (2024) p16
50. G. Zlatić, I. Martinović, Z. Pilić, **S. Gutić**, Electrochemical Behaviour of Aluminium in Artificial Seawater in Presence of Artemisia annua L., 9th Regional Symposium on Electrochemistry - South-East Europe, Novi Sad, Serbia, Book of Abstracts (2024) p80
51. S. Korać, L. Vilašević, M. Durak, A. Hrnjić, F. Korać, **S.J. Gutić**, Corrosion behaviour of nickel and nickel alloy coatings on stainless steel in highly alkaline environments: effects of chloride and bromide, 9th Regional Symposium on Electrochemistry - South-East Europe, Novi Sad, Serbia, Book of Abstracts (2024) p82
52. T. Ćetković Pećar, I. Durmišević, M. Hadžić Omanović, I. Mujković, Dž. Begović, S. Ćurovac, A. Haverić, **S. Gutić**, S. Haverić, Bioactivity assessment of graphene quantum dots on HEK293T cells, Abstracts of the 52nd EEMGS meeting, Arhiv Za Higijenu Rada i Toksikologiju 75 (2024) 120
53. T. Ćetković, **S. Gutić**, S. Haverić, L. Čaluk Klačar, M. Hadžić Omanović, A. Haverić, Toxicity of graphene nanomaterials in HEK 293T cells – effects of surface modifications by thermal treatment, *Toxicology Letters Special Issue: Abstracts of the XVI International Congress of Toxicology* (2022) S308
54. D. Karačić, I.A. Pašti, **S.J. Gutić**, Residual Manganese and Inert Electrolyte - Effects on the ORR Activity of Electrochemically Reduced Graphene Oxides, *Physical Chemistry 2021 – 4th International Meeting on Materials Science for Energy Related Applications*, September 22-23, 2021, Belgrade, Serbia, Book of Abstracts, p4
55. I. Pašti, T. Lazarević-Pašti, **S. Gutić**, Ultrasound and Graphene Oxide - Something Good and Something Bad, *Physical Chemistry 2021 – 4th International Meeting on Materials Science for Energy Related Applications*, September 22-23, 2021, Belgrade, Serbia, Book of Abstracts, p59
56. L.D. Rafailović, C. Gammer, T.Lj. Trišović, C. Rentenberger, A.Z. Jovanović, I.A. Pašti, **S. Gutić**, H.P. Karnthaler, Design of Nanostructured Materials By Electrochemical Approaches, ECS Meeting Abstracts (2021) MA2021-02 694

Knjige i udžbenici prije izbora u trenutno zvanje

1. Fehim Korać, **Sanjin Gutić**, , Jelena Ostojić, Safija Herenda, Sabina Gojak-Salimović, „Praktikum iz elektrohemije“, Prirodno-matematički fakultet Sarajevo, 2019, ISBN 978-9926-453-17-6
2. Fehim Korać, **Sanjin Gutić**, Safija Herenda, Jelena Ostojić, Sabina Gojak-Salimović, „Praktikum iz korozije i zaštite“ Prirodno-matematički fakultet, Univerzitet u Sarajevu, Sarajevo, 2017, ISBN 978-9958-592-98-0
3. Fehim Korać, **Sanjin Gutić**, Sabina Gojak, Safija Islamović, Jelena Ostojić, „Praktikum fizikalne hemije (prvi dio)“, Prirodno-matematički fakultet Sarajevo, 2013, ISBN 978-9958-592-41-6

Knjige i udžbenici nakon izbora u trenutno zvanje

1. Sabina Gojak-Salimović, Jelena Ostojić, Safija Herenda, **Sanjin Gutić**, Fehim Korać „Praktikum iz kinetike i katalize“, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 2025, ISBN 978-9926-453-96-1
2. Sabina Gojak-Salimović, Jelena Ostojić, Fehim Korać, **Sanjin Gutić**, Safija Herenda „Praktikum fizikalne hemije (drugi dio)“, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 2024, ISBN 978-9926-453-81-7

Mentorstva završnih radova II i III ciklusa

Mentorstva na II ciklusu studija prije izbora u trenutno zvanje

Prije izbora u trenutno zvanje mentor je na 8 završnih radova II ciklusa studija.

Mentorstva na II ciklusu studija nakon izbora u trenutno zvanje

Nakon izbora u trenutno zvanje mentor je na 21 završni rad II ciklusa studija:

1. **Harun Zubčević**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 8.1.2026.
„Lokalno elektrohemijsko ponašanje grafen-oksidnih filmova u inertnim elektrolitima“

2. **Asad Trepalovac**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 21.11.2025.
„Sklapanje i elektrohemijsko testiranje alkalnog elektrolizera vode snage 125 W“

3. **Tijana Delić**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 29.9.2025.
„Vodonična energija u učionici - demonstracija elektrokatalitičkog razlaganja i stvaranja vode“

4. **Benjamin Lemezan**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 30.9.2024.
„Elektroforetska priprema Pt@rGO i PtNi@rGO elektrokatalizatora za reakcije od značaja za gorive ćelije“

5. **Svjetlana Adžić-Avdović**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 30.9.2024.
„Skaliranje procesa elektrodepozicije legura NiMo na nehrđajućem čeliku“

6. **Lejla Vilašević**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 27.9.2024.
„Gravimetrijska analiza uticaja inertnog elektrolita na elektrohemijsku redukciju grafen oksidnih filmova“

7. **Medžida Durak**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 27.9.2024.

„Gravimetrijska analiza simultane redukcije grafen oksida i elektrodepozicije metalnih nanočestica“

8. **Žana Ivešić**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 8.11.2023.
„Efekat predtretmana grafen oksida na elektrokatalitičku aktivnost i stabilnost NiMo@rGO“

9. **Imran Nakić**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 29.9.2023.
„Kapacitivna svojstva nanostruktuisanog MnO_2“

10. **Ajla Bajramović**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 29.9.2023.
„Elektrodepozicija i elektrokatalitička aktivnost NiSn prema reakciji elektrohemijskog izdvajanja vodika“

11. **Sanel Draganović**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 25.9.2023.
„Ispitivanje citotoksičnosti komercijalnih grafenskih kvantnih tačkica“

12. **Ahmed Dugonja**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 21.3.2023.
„Uticaj sastava elektrolita na elektrokatalitička svojstva NiMo prema reakciji evolucije vodika“

13. **Elma Imamović**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 30.9.2022.
„Efekat predtretmana grafen oksida na elektrokatalitičku aktivnost i stabilnost Ni@rGO“

14. **Nađa Nalić**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 30.9.2022.
„Ispitivanje elektrohemijskih karakteristika vodonične gorive ćelije sa proton-propusnom membranom“

15. **Sara Timotija**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 29.7.2022.
„Ispitivanje citotoksičnosti grafenskih kvantnih tačkica u funkciji frakcije polaznog grafita“

16. **Alma Maslar**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 25.7.2022.
„Modifikacija NiMo i NiMo@rGO aminima - efekat na katalitičku aktivnost i stabilnost za reakciju izdvajanja vodika“

17. **Faris Buljubašić**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 15.7.2022.
„Elektrohemijsko ispitivanje stabilnosti grafen oksida u vodenim i alkoholnim suspenzijama“

18. **Amina Pašović**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 14.7.2022.
„Impedansne i voltametrijske karakteristike različith supstrata za Ni@rGO i NiMo@rGO katalizatore“

19. **Ajla Begić**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 30.7.2021.
„Ispitivanje efekta potencijala redukcije/depozicije na elektrokatalitička svojstva Ni@rGO“

20. **Edin Živalj**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 22.7.2021.
„Ispitivanje elektrohemijskih svojstava grafen oksida u funkciji frakcije polaznog grafita“

21. **Edin Smajlović**, Univerzitet u Sarajevu – Prirodno-matematički fakultet, 29.10.2020.
„Adsorpcija na grafenskim materijalima – efekat aromatičnosti adsorbata“

Mentorstva na III ciklusu studija

1. Dalibor Karačić, Univerzitet u Beogradu – Fakultet za fizičku hemiju, 29.9.2022.
„Efekat temperature i koncentracije rastvora hlorida alkalnih metala na elektrohemijsku redukciju i kapacitivnost grafen-oksida“

2.Tamara Ćetković Pećar, Univerzitet u Sarajevu – Prirodno-matematički fakultet, u toku (odbrana planirana u junu 2026.). „Analiza biokompatibilnosti odabranih grafenskih nanomaterijala u humanim ćelijskim linijama HEK-293T i BEAS-2B“

Učešće u komisijama za ocjenu i odbranu završnih radova

- Član Komisije za ocjenu podobnosti teme doktorske disertacije pod naslovom „Electrodeposited Multicomponent Earth-Abundant Alloy Coatings as Precursors for Durable Oxygen Evolution Catalysts“ kandidata Muhammada Zahida na Univerzitetu u Ljubljani – Fakultet za hemiju i hemijsku tehnologiju
- Član Komisije za ocjenu i odbranu doktorske disertacije pod naslovom „Catalytic conversion of chlorine to hydrochloric acid“ kandidata Edina Živalja na Univerzitetu u Novoj Gorici – Postidiplomski doktorski studijski program Materijali
- Član Komisije za ocjenu i odbranu doktorske disertacije pod naslovom „Systematic Study and Enhancement of Conditioning Procedures for Proton Exchange Membrane Fuel Cells“ kandidata Mitje Kosteleca na Univerzitetu u Novoj Gorici Postidiplomski doktorski studijski program Materijali
- Predsjednik Komisije za ocjenu podobnosti teme doktorske disertacije pod naslovom „Samodopirani polianilin u sistemima za elektrohemijsku konverziju energije“ kandidatkinje Selme Burović na Univerzitetu u Sarajevu – Prirodno-matematičkom fakultetu
- Član Komisije za ocjenu i odbranu doktorskog rada pod naslovom „Sinteza grafenova oksida i reduciranoga grafenova oksida te njihova površinska modifikacija za primjenu u superkondenzatorima“ kandidata Denisa Sačera na Sveučilištu u Zagrebu – Fakultet kemijskog inženjerstva i tehnologije, Zagreb, 2018. godine
- Predsjednik Komisije za odbranu doktorske disertacije pod naslovom „Ispitivanje uticaja ekstrakta maline (*Rubus idaeus* L.) na korozione karakteristike bakra i njegovih legura“ kandidatkinje Dejane Kasapović na Univerzitetu u Sarajevu – Prirodno-matematičkom fakultetu, Sarajevo, 2023. godine
- Učešće u komisijama za ocjenu i odbranu završnih radova I i II ciklusa na Univerzitetu u Sarajevu, Univerzitetu u Beogradu i Univerzitetu u Banjoj Luci

Broj internacionalnih istraživačkih projekata

- 2024. - Osmosis-Assisted Seawater Electrolysis for Green Offshore Hydrogen Production – SeaCat NATO Science for Peace and Security Programme. Direktori projekta: dr Nejc Hodnik, Kemijski inštitut, Ljubljana, Slovenija; dr Sanjin Gutić, Univerzitet u Sarajevu – Prirodno-matematički fakultet, Sarajevo, Bosna i Hercegovina; dr Igor Pašti, Univerzitet u Beogradu – Fakultet za fizičku hemiju, Beograd, Srbija
- 2020. -2023. Optimizing Fuel Cell Catalyst Stability upon Integration with Reforming – OFICeR NATO Science for Peace and Security Programme. Direktori projekta: dr Nejc Hodnik, Kemijski inštitut, Ljubljana, Slovenija; dr Sanjin Gutić, Univerzitet u Sarajevu – Prirodno-

matematički fakultet, Sarajevo, Bosna i Hercegovina; dr Igor Pašti, Univerzitet u Beogradu – Fakultet za fizičku hemiju, Beograd, Srbija

Broj domaćih istraživačkih projekata

- 2022. Nanostruktuisani metalni katalizatori za elektrohemijsku proizvodnju i potrošnju zelenog vodonika – od lokalne elektrohemije do poboljšanje stabilnosti. Ministarstvo za nauku, visoko obrazovanje i mlade Kantona Sarajevo. Voditelj projekta: prof. dr Sanjin Gutić
- 2019. Funkcionalizovani grafenski materijali u elektrohemijskim sistemima za konverziju i skladištenje energije. Federalno ministarstvo nauke i obrazovanja. Voditelj projekta: prof. dr Sanjin Gutić

Projekti sa industrijom

- 2025. - Reciklaža litijum-jonskih baterija. DV Power / KV Team
- 2023. - Razvoj alkalnog elektrolizera vode HEET d.o.o. Prozor/Rama, BiH. Voditelj projekta: prof. dr Sanjin Gutić
- 2014. - Razvoj prototipa Li-jon baterije, u okviru projekta „Elektromobilnost“, Prevent BH, Sarajevo, BiH. Voditelj razvoja: dr Sanjin Gutić
- 2011. Recikliranje plemenitih metala iz industrijskih katalizatora „Bazna hemija d.d.“ Goražde, BiH. Stručni saradnik (Voditelj projekta: prof. dr Borivoj Galić).

Drugi razvojni projekti

- 2022. - Razvoj gorivne ćelije sa proton-propusnom membranom. JU Centar za napredne tehnologije Sarajevo, BiH. Naučni saradnik (Voditelj projekta: Ensar Mulaosmanović)
- 2012. Uspostavljanje laboratorije za elektrohemiju – Univerzitet u Sarajevu – Prirodno-matematički fakultet. Federalno ministarstvo nauke i obrazovanja. Stručni saradnik (Voditelj projekta: prof. dr Fehim Korać)

Organizacija međunarodnih kongresa i skupova (članstvo u organizacijskom odboru)

Član naučnog odbora

- 10th Regional Symposium on Electrochemistry – South-East Europe, Prague, Czech Republic, 2026
- 5th International Meeting on Materials Science for Energy Related Applications, Belgrade, Serbia, 2025
- 9th Regional Symposium on Electrochemistry – South-East Europe, Novi Sad, Serbia, 2024
- 8th Regional Symposium on Electrochemistry – South-East Europe, Graz, Austria, 2022
- ENERSTOCK 2021 - ”Towards Smarter Solutions“, Ljubljana, Slovenia, 2021

- Physical Chemistry 2020 Satellite Event: 4th International Meeting on Materials Science for Energy Related Applications, Belgrade, Serbia, 2020
- 7th Regional Symposium on Electrochemistry – South-East Europe, Split, Croatia, 2019

Član organizacionog odbora

- Physical Chemistry 2018 Satellite Event: 3rd International Meeting on Materials Science for Energy Related Applications, Belgrade, Serbia, 2018
- 6th Regional Symposium on Electrochemistry – South-East Europe, Balatonkenese, Hungary, 2017
- 5th Regional Symposium on Electrochemistry – South-East Europe, Pravets, Bulgaria, 2015

Organizacija domaćih kongresa i skupova (članstvo u organizacijskom odboru)

- XVI Conference of Chemists, Technologists and Ecologists of Republic of Srpska, Banja Luka, Bosnia and Herzegovina, 2026
- 6th International Congress of Chemists and Chemical Engineers of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina, 2026
- 5th International Congress of Chemists and Chemical Engineers of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina, 2024
- 4th International Congress of Chemists and Chemical Engineers of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina, 2022
- XIII Conference of Chemists, Technologists and Environmentalists of Republic of Srpska, Teslić, Bosnia and Herzegovina, 2020
- XII Conference of Chemists, Technologists and Environmentalists of Republic of Srpska, Teslić, Bosnia and Herzegovina, 2018
- 3rd International Congress of Chemists and Chemical Engineers of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina, 2018

Nastavno-pedagoški rad

U periodu od 2020. do 2026. godine, kao vanredni profesor, realizirao nastavu (predavanja, računske i laboratorijske vježbe) iz više predmeta na Katedri za fizikalnu hemiju Univerziteta u Sarajevu - Prirodno-matematičkog fakulteta Odsjeka za hemiju.

I ciklus

- Fizikalna hemija I (računske i laboratorijske vježbe)
- Odabrana poglavlja fizikalne hemije I (računske i laboratorijske vježbe)
- Fizikalna hemija II (predavanja, računske i laboratorijske vježbe)
- Elektrohemija (računske vježbe)
- Odabrana poglavlja elektrohemije (predavanja i laboratorijske vježbe)
- Površinski aktivne supstance (predavanja i laboratorijske vježbe)
- Moderni sistemi za konverziju i pohranu energije (predavanja i laboratorijske vježbe)

- Fizikalna hemija nanomaterijala (predavanja i laboratorijske vježbe)
- Provodni polimeri (predavanja i laboratorijske vježbe)

III ciklus

- Elektrohemijski sistemi za pohranu energije

Međunarodna saradnja i mobilnost

- 2026. - Development of noble and non-noble electrocatalysts for water 2027. electrolysis. Voditelji projekta: dr Milutin Smiljanić, Kemijski inštitut Ljubljana,Slovenija, dr Sanjin Gutić, Univerzitet u Sarajevu – Prirodno-matematički fakultet, Sarajevo, Bosna i Hercegovina
- 2022. - COST action CA21126: Carbon molecular nanostructures in space. Management Committee member
- 2020. - COST action CA18234: Computational materials sciences for efficient water splitting with nanocrystals from abundant elements. Management Committee member
- 2019. - COST action CA19118: High-performance Carbon-based composites with Smart properties for Advanced Sensing . Applications. Management Committee member
- 2019. 2020 - Optimization and stability testing of transition metal/reduced graphene oxide electrocatalysts. Ministarstvo civilnih poslova Bosne i Hercegovine & Austrijska agencija za međunarodnu saradnju u obrazovanju i istraživanju (OeAD). Voditelji projekta: dr Lidija Rafailović, CEST – Competence Center for Electrochemical Surface Technology, Wiener Neustadt, Austrija, dr Sanjin Gutić, Univerzitet u Sarajevu – Prirodno-matematički fakultet, Sarajevo, Bosna i Hercegovina
- 2018. - Odsjek za katalizu i hemijsko reakcijsko inženjerstvo. Kemijski inštitut, Ljubljana, Slovenija. Gostujući istraživač
- 2016. - Univerzitet u Beogradu – Fakultet za fizičku hemiju, Beograd, Srbija. Gostujući istraživač

Predavanja po pozivu

- 2023. Innovations in green hydrogen procution by water electrolysis and role of the academic institutions (Panel 4). Sarajevo Energy Forum. Hotel Hills Sarajevo, Bosnia and Herzegovina
- 2022. Od laboratorije do pristupačnog realnog sistema – novi katalizatori za elektrohemijsku proizvodnju i potrošnju vodika. II. Mostar Hydrogen Forum – H2 - od proizvodnje do potrošnje vodika u industriji. Hrvatska udruga za razvoj i primjenu gorivnih članaka. INTERA – Tehnološki park, Mostar, Bosna i Hercegovina
- 2022. Grafeni kao podloga za elektrokatalizatore: od hiperbola do raznovrsnih realnih sistema. Naučni skup „Savremeni pravci istraživanja vodonika kao goriva budućnosti“. Srpska akademija nauka i umetnosti, Beograd, Srbija

Društveni doprinos i popularizacija nauke

- Osnivač i član Upravnog odbora Bosanskohercegovačkog udruženja za vodonik B-H2
- Organizator i učesnik manifestacije Otvoreni dani hemije na Univerzitetu u Sarajevu – Prirodno-matematičkom fakultetu
- Organizator i učesnik manifestacije Škola hemije 2025 – Periodni sistem znanja na Univerzitetu u Sarajevu – Prirodno-matematičkom fakultetu
- Organizator i predavač na više naučnopopularnih predavanja za učenike srednjih škola
- Predavač na Ljetnoj školi „Zelena hemija za zeleniju budućnost“ u organizaciji udruženja „Centar za energiju, okolinu i resurse – CENER 21“, Visoko, 2024
- Predavač na Futures Leaders Summit 2024, Sarajevo

Članstva u profesionalnim udruženjima

- Društvo kemičara i tehnologa Kantona Sarajevo
- Association of South East European Electrochemists
- Bosanskohercegovačko udruženje za vodonik B-H2

PRIJEDLOG SA OBRAZLOŽENJEM

U pripremi prijedloga za izbor NASTAVNIKA u zvanje REDOVNOG PROFESORA za oblast Fizikalna hemija, u Odsjeku za hemiju Prirodno-matematičkog fakulteta Univerziteta u Sarajevu, uzeli smo u obzir relevantne podatke o kandidatu, rukovodeći se sljedećim kriterijima koji su predviđeni Zakonom o visokom obrazovanju Kantona Sarajevo i Statutom Univerziteta u Sarajevu, a pridržavajući se Podsjetnika za pisanje izvještaja za izbor nastavnika i saradnika Univerziteta u Sarajevu, Komisija je zaključila da kandidat, nakon izbora u prethodno zvanje:

- ima naučni stepen doktora nauka - fizičkohemijske nauke iz oblasti za koju se bira,
- proveo šest godina u zvanju vanredni profesor,
- objavio je osam originalnih naučnih radova u priznatim publikacijama, koji su citirani u jednoj ili više relevantnih međunarodnih baza podataka (Current Contents Connect, Science Citation Index Expanded, Chemical Abstracts Service, SCOPUS, EBSCO)
- učestvovao je na više međunarodnih naučnih i stručnih skupova na kojima je kao autor i koautor predstavio jedanaest radova čiji sažeci su objavljeni u zbornicima. Skupovi na kojima je učestvovao prate oblast Fizikalna hemija,
- svi radovi su objavljeni u časopisima su iz oblasti Fizikalna hemija,
- koautor je dva recenzirana univerzitetska udžbenika,
- učesnik je u jednom međunarodnom naučno-istraživačkom projektu,
- voditelj četiri domaća istraživačka projekta,
- učestvovao je u organizaciji šest međunarodnih naučnih kongresa,
- učestvovao je u organizaciji četiri domaća naučna kongresa,
- mentor je 21 uspješno odbranjenog završnog rada II ciklusa studija,
- mentor jednog doktorskog rada na III ciklusu studija,
- pokazao je uspješne rezultate u nastavno-pedagoškom radu sa studentima Univerziteta u Sarajevu - Prirodno-matematičkog fakulteta.

S obzirom na navedene činjenice, Komisija smatra da kandidat dr. sci. Sanjin Gutić, vanredni profesor Univerziteta u Sarajevu - Prirodno-matematički fakultet, Odsjek za hemiju, ispunjava sve uslove za

izbor u zvanje REDOVNI PROFESOR za oblast Fizikalna hemija na Univerzitetu u Sarajevu - Prirodno-matematički fakultet, Odsjek za hemiju u skladu sa članom 176. Zakona o visokom obrazovanju (Službene novine Kantona Sarajevo, broj: 36/22), članom 96. stav (f), Zakona o visokom obrazovanju (Službene novine Kantona Sarajevo, broj: 33/17, 35/20, 40/20 i 39/21) i članom 294. Statuta Univerziteta u Sarajevu (01-14-35-1/23 od 26.07.2023. godine).

S obzirom na navedene činjenice i pridržavajući se uslova zadatih Konkursom i kriterija koji su propisani Zakonom o visokom obrazovanju Kantona Sarajevo i Statutom Univerziteta u Sarajevu, Komisija predlaže Vijeću Univerziteta u Sarajevu - Prirodno-matematičkog fakulteta da izabere kandidata dr. Sanjina Gutića za nastavnika, u zvanju

REDOVNI PROFESOR, za oblast Fizikalna hemija

na Univerzitetu u Sarajevu - Prirodno-matematičkom fakultetu na Odsjeku za hemiju, te da u vezi s tim nastavi zakonom predviđenu proceduru do okončanja postupka.

Sarajevo, Beograd, 18. 5. 2026. godine

ČLANOVI KOMISIJE

Dr. Fehim Korać, redovni profesor

Dr. Igor Pašti, redovni profesor

Dr. Safija Herenda, redovna profesorica