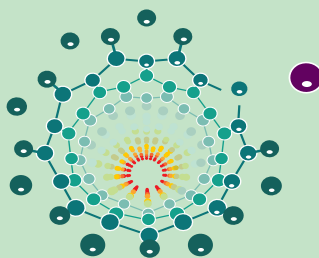


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# IZVEŠTAJ O NAUČNOISTRAŽIVAČKOM RADU FAKULTETA

za period 2011-16 godina

Beograd, 2016

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3. Projekat OI 172019 „Efekti dejstva laserskog zračenja i plazme na savremene materijale pri njihovoj sintezi, modifikaciji i analizi“, Institut za nuklearne nauke Vinča
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3. Bilateralni projekat "Oksidi prelaznih metala kao elektrodni materijali za litijum jonske baterije" koji je odobren za period 2013-2015 u okviru programa bilateralne naučne i tehnološke saradnje između Republike Srbije i Republike Portugal

4. Međunarodni projekat bilateralne saradnje Srbija - Francuska u okviru programa Pavle Savić. Naziv projekta: "Razvoj teorijskih metodologija za procenu antioksidativne aktivnosti polifenola: put ka primenama u realnom životu" (institucije uključene u projekat:



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7. FP7 JTI FCH-JU project "EURECA" [303024], coordinator za Srbiju: Dr Milica Marčeta Kaninski, INN Vinča

8. COST Action MP1003 European Scientific Network for Artificial Muscles (dec. 2010 – dec. 2014), član Menadžment Komiteta iz Srbije i rukovodilac domaćeg istraživačkog tima G. Ćirić-Marjanović) [www.esnam.eu](http://www.esnam.eu).

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2. Projekat OI 172018 „Porozni materijali na bazi oksida u zaštiti životne sredine od genotoksičnih supstanci“, Fakultet za fizičku hemiju, rukovodilac prof. dr Vera Dondur

3. Projekat OI 172019 „Efekti dejstva laserskog zračenja i plazme na savremene materijale pri njihovoj sintezi, modifikaciji i analizi“, Institut za nuklearne nauke Vinča

4. Projekat OI 172030 „Primena unapređenih oksidacionih procesa i nanostrukturisanih oksidnih materijala za uklanjanje zagađivača iz životne sredine, razvoj i optimizacija instrumentalnih tehnika za praćenje efikasnosti“, Hemijski fakultet

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6. Projekat OI 172043. „Elektroprovodni i redoks-aktivni polimeri i oligomeri: sinteza, struktura, svojstva i primena“, Fakultet za fizičku hemiju, rukovodilac prof. dr Gordana Ćirić-Marjanović

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### **Članstvo u naučnim odborima naučnih skupova**

1. Član naučnog i organizacionog odbora konferencije Young Researchers' Conference-Materials Science and Engineering, Gordana Ćirić-Marjanović.
2. Član organizacionog odbora i urednik knjige abstrakata za 1st Workshop on Materials Science for Energy Related Applications, Beograd 26-27. septembar 2014, propratni događaj konferencije Physical Chemistry 2014, Igor Pašti.
3. Member of International Scientific Committee of 12th International Conference on Fundamental and Applied Aspects of Physical Chemistry, Belgrade, Serbia, September 22-26, 2014, Ljiljana Kolar-Anić.
4. Član organizacionog odbora za 1st Workshop on Materials Science for Energy Related Applications, Beograd 26-27. septembar 2014, propratni događaj konferencije Physical Chemistry 2014, Nemanja Gavrilov.
5. International Scientific Committee, PHYSICAL CHEMISTRY 2014, 12<sup>th</sup> International Conference on Fundamental and Applied Aspects of Physical Chemistry, Šćepan Miljanić.

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2. Međunarodni projekat "DURAPEM-Novel Materilas for Durable Proton Exchange Membrane Fuel Cells, NATO-Science for Peace and Security SPS) Programme, ostvarenog između Slovenije i Republike Srbije, koji je odobren od 11.05.2015-11.05.2018.

3. SCIMFONICOM 2014-15 (Science in Motion for Friday Night Commotion 2014-15), Project reference: 633376, H2020-MSCA-NIGHT-2014

4. SCOPEs (Scientific cooperation between eastern Europe and Switzerland) – Project No IZ73ZO\_152457 “Conducting polymers synthesized by enzymatic polymerization”, financed by the Swiss National Science Foundation (SNSF) and the Swiss Agency for Development and Co-operation (SDC), May 2014–May 2017. Main applicant prof. Dr Peter Walde, ETH Zurich - Swiss Federal Institute of Technology, Switzerland, co-applicant (partner) iz Srbije prof. Dr Gordana Ćirić-Marjanović.

5. Danube States R&D network project “New materials and devices based on conducting polymers and their composites” (POLYCON for Danubian network–Stage 2), funded by the German Federal Ministry of Education and Research Septembar, trajanje 1. septembar 2015-31. januar 2016, koordinator prof. V. Mirsky, rukovodilac tima iz Srbije prof. dr G. Ćirić-Marjanović

6. "Catalysis by metal cluster supported by complex oxide substrates". Institucije uključene u projekat: KTH, Royal Institute of Technology, Stockholm i Univerzitet u Beogradu - Fakultet za fizičku hemiju. (koordinator sa srpske strane) Igor Pašti.

7. Fizičko-hemijska karakterizacija heteropoli jedinjenja (Physicochemical Characterisation of Heteropoly Compounds), Institut za Neorgansku Hemiju Rumunske Akademije Nauka, Temišvar, Rumunija I Fakultet za Fizičku Hemiju, Univerzitet u Beogradu, Beograd, Srbija, 2013-2015.

8. CMST COST Action CM1304 "Emergence and Evolution of Complex Chemical Systems"

9. BM1203 (EU-ROS) – MC Miloš Mojović

10. BM1402 (Raman-based applications for clinical diagnostics (Raman4clinics) – MC Marko Daković, MC zamenik Miloš Mojović, MC zamenik Ana Popović-Bijelić

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## Nacionalni naučni projekti

1. Projekat OI 172015 „Dinamika nelinearnih fizičko-hemijskih i biohemijskih sistema sa modeliranjem i predviđanjem njihovih ponašanja pod neravnotežnim uslovima“, Fakultet za fizičku hemiju, rukovodilac prof. dr Ljiljana Kolar-Anić
2. Projekat OI 172018 „Porozni materijali na bazi oksida u zaštiti životne sredine od genotoksičnih supstanci“, Fakultet za fizičku hemiju, rukovodilac prof. dr Vera Dondur
3. Projekat OI 172019 „Efekti dejstva laserskog zračenja i plazme na savremene materijale pri njihovoj sintezi, modifikaciji i analizi“, Institut za nuklearne nauke Vinča
4. Projekat OI 172030 „Primena unapređenih oksidacionih procesa i nanostrukturisanih oksidnih materijala za uklanjanje zagađivača iz životne sredine, razvoj i optimizacija instrumentalnih tehnika za praćenje efikasnosti“, Hemijski fakultet
5. Projekat OI 172040, „Struktura i dinamika molekularnih sistema u osnovnim i pobuđenim elektronskim stanjima“, Fakultet za fizičku hemiju, rukovodilac dr Mihajlo Etinski
6. Projekat OI 172043. „Elektroprovodni i redoks-aktivni polimeri i oligomeri: sinteza, struktura, svojstva i primena“, Fakultet za fizičku hemiju, rukovodilac prof. dr Gordana Ćirić-Marjanović
7. Projekat OI 177021 „Procesi urbanizacije i razvoja srednjovekovnog društva“, Arheološki institut
8. Projekat III 41005 “Biomerkeri u neurodegenerativnim i malignim procesima”, Biološki fakultet
9. Projekat III 45014 „Litijum-jon baterije i gorivne ćelije – Istraživanje i razvoj“, Fakultet za fizičku hemiju, prof. dr Slavko Mentus
10. Projekat III 45001 „Nanostrukturni funkcionalni materijali u katalitičkim i sorpcionim procesima“, Institut za hemiju, tehnologiju i metalurgiju

## Članstvo u naučnim odborima naučnih skupova

1. Član Naučnog odbora internacionalne konferencije "Dinamički sistemi -teorija i primena" ("Dynamical Systems – Theory and Applications" (DSTA 2015)), 7-10 Decembar 2015, Lodz, University of Technology, Poland. Ljiljana Kolar-Anić.
2. Simpozijum Hemija i zaštita životne sredine sa međunarodnim učešćem Palić, Srbija, 09 - 12. jun 2015. Ljubiša Ignjatović.
3. Član Međunarodnog naučnog komiteta - International Scientific Committee, 12th International Conference on Fundamental and Applied Aspects of Physical Chemistry – Physical Chemistry 2014. Šćepan Miljanić.
4. 1st WORKSHOP on MATERIALS SCIENCE FOR ENERGY RELATED APPLICATIONS, organized by KTH Royal Institute of Technology Stockholm, Sweden and The Society of Physical Chemists of Serbia – Physical Chemistry 2014. Šćepan Miljanić.
5. Organizacija WG5 sastanka COST akcije EU-ROS (BM1203) u Beogradu 16-17. Mart 2015. Miloš Mojović

### **Uređivanje međunarodnog naučnog časopisa**

1. Područni urednik za fizičku hemiju za časopis Journal of the Serbian Chemical Society, Ljiljana Damjanović
2. Specijalna sveska : "Effects of Hydrogels Chemistry and Functionality on Swelling and Dehydration" Casopisa International Journal of Polymer Science, Izdavač : Hundawi. Rok za predaju radova: 29 januar 2016; završene recenzije: april 22, 2016, planirano publikovanje : jun 17, 2016. Borivoj Adnađević

### **Patenti**

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### **Nagrade**

1. Nagrada Privredne Komore Beograda za pronalazak "Elektrokatalitički superkondenzator na bazi ugljeničnih nanočestica sa vodenim elektrolitičkim rastvorom" ostvaren u 2013/2014 godini, dobitnici nagrade autori patenta N. Gavrilov, M. Vujković, I. Pašti, G. Ćirić-Marjanović i S. Mentus.
2. Specijalno priznanje Srpskog hemijskog društva za izuzetan uspeh u toku studija na Fakultetu za fizičku hemiju Univerziteta u Beogradu (3. decembar 2014. godine), Ana Dobrota.

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3. Francusko-srpski projekat "Pametne ekološki prihvatljive nanostrukture i nankompoziti", 2016-2017.

4. Hrvatsko-srpski projekat "Uticaj strukture hijerarhijski poroznih zeolita na njihova adsorpciona svojstva", 2016-2017.

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6. Bilateralni projekat sa N.R. Kinom "Dobijanje visoko kvalitetnog sintetičkog rutila iz titanijumske zgure mikrotalasnim zagrevanjem", Evidencioni broj projekta 3-6.

7. SCOPES (Scientific cooperation between eastern Europe and Switzerland) – Project No IZ73ZO\_152457 "Conducting polymers synthesized by enzymatic polymerization", financed by the Swiss National Science Foundation (SNSF) and the Swiss Agency for Development and Co-operation (SDC), May 2014–May 2017. Rukovodilac prof. Dr Peter Walde, ETH Zurich - Swiss Federal Institute of Technology, Switzerland, rukovodilac tima iz Srbije prof. Dr Gordana Čirić-Marjanović.

8. Danube States R&D network project "New materials and devices based on conducting polymers and their composites" (POLYCON for Danubian network–Stage 2), funded by the German Federal Ministry of Education and Research Septembar, trajanje 1. septembar 2015-31. januar 2016, koordinator prof. V. Mirsky, rukovodilac tima iz Srbije prof. dr G. Čirić-Marjanović

9. NATO-Science for Peace and Security Programme, EAP.SFPP 984925 – DURAPEM.

10. "Catalysis by metal cluster supported by complex oxide substrates". Institucije uključene

11. u projekat: KTH, Royal Institute of Technology, Stockholm i Univerzitet u Beogradu-Fakultet za fizičku hemiju. (koordinator sa srpske strane) Igor Pašti.

#### **COST akcije:**

12. BM1401 Raman-Based Applications for Clinical Diagnostics (Raman4clinics), 2014–2018, zamenik člana Menadžment komiteta 1) Ana Popović-Bijelić, 2) dr Miloš Mojović.

13. CM 1305 Explicit Control Over Spin-states in Technology and Biochemistry (ECOSTBio), 2014–2018, član radne grupe 2, dr Ana Popović-Bijelić.

14. CA 15126 Between Atom and Cell: Integrating Molecular Biophysics Approaches for Biology and Healthcare (MOBIEU), 2015–2019, zamenik člana Menadžment komiteta, dr Ana Popović-Bijelić.

15. CM 1304 - Emergence and Evolution of Complex Chemical Systems

16. BM1203 EU-ROS – Synthesis and emulsification of new spin probes for application in *in vivo* evaluation of oxidative stress

17. CA15126 Between Atom and Cell: Integrating Molecular Biophysics Approaches for Biology and Healthcare (MOBIEU).

18. CM1401 - Our Astro-Chemical History (2014-2018), predstavnik Srbije u menadžment komitetu, dr Stanka Jerosimić.

19. BM1203 - Biomedicine And Molecular Bioscience (EU-ROS); MC – član, dr Miloš Mojović.

### Nacionalni naučni projekti

1. Projekat OI 172015 „Dinamika nelinearnih fizičko-hemijskih i biohemijskih sistema sa modeliranjem i predviđanjem njihovih ponašanja pod neravnotežnim uslovima“, Fakultet za fizičku hemiju, rukovodilac prof. dr Ljiljana Kolar-Anić

2. Projekat OI 172018 „Porozni materijali na bazi oksida u zaštiti životne sredine od genotoksičnih supstanci“, Fakultet za fizičku hemiju, rukovodilac prof. dr Vera Dondur

3. Projekat OI 172019 „Efekti dejstva laserskog zračenja i plazme na savremene materijale pri njihovoj sintezi, modifikaciji i analizi“, Institut za nuklearne nauke Vinča

4. Projekat OI 172030 „Primena unapređenih oksidacionih procesa i nanostrukturisanih oksidnih materijala za uklanjanje zagađivača iz životne sredine, razvoj i optimizacija instrumentalnih tehnika za praćenje efikasnosti“, Hemijski fakultet

5. Projekat OI 172040, „Struktura i dinamika molekulskih sistema u osnovnim i pobuđenim elektronskim stanjima“, Fakultet za fizičku hemiju, rukovodilac dr Mihajlo Etinski

6. Projekat OI 172043. „Elektroprovodni i redoks-aktivni polimeri i oligomeri: sinteza, struktura, svojstva i primena“, Fakultet za fizičku hemiju, rukovodilac prof. dr Gordana Ćirić-Marjanović

7. Projekat OI 177021 „Procesi urbanizacije i razvoja srednjevekovnog društva“, Arheološki institut

8. Projekat III 41005 “Biomerkeri u neurodegenerativnim i malignim procesima”, Biološki fakultet

9. Projekat III 45014 „Litijum-jon baterije i gorivne ćelije – Istraživanje i razvoj“, Fakultet za fizičku hemiju, prof. dr Slavko Mentus

10. Projekat III 45001 „Nanostrukturni funkcionalni materijali u katalitičkim i sorpcionim procesima“, Institut za hemiju, tehnologiju i metalurgiju

### Članstvo u naučnim odborima naučnih skupova

1. Član internacionalnog organizacionog komiteta naučnog skupa pod nazivom: 13<sup>th</sup> International Conference on Fundamental and Applied Aspects of Physical Chemistry, Belgrade, 26-30.09.2016. 1) dr Jasmina Dimitrić-Marković, 2) dr Dragomir Stanisavljev, 3) Itana Nuša Bubanja, 4) dr Ljiljana Kolar-Anić, 5) Stevan Maćešić, 6) dr Borivoj Adnađević

2. Član Naučnog odbora 53. savetovanja SHD, Kragujevac, Srbija, 10.-11. 06. 2016. dr Ivanka Holclajtner-Antunović.

3. Član Naučnog odbora internacionalne konferencije "Dinamički sistemi -teorija i primena" ("Dynamical Systems – Theory and Applications" (DSTA 2015)), 7-10 Decembar 2015, Lodz, University of Technology, Poland. dr Ljiljana Kolar-Anić

4. A SOC member of the School: “Astrochemistry: From Space to Earth”, co-organized by Université Grenoble Alpes, CNRS, the PCMI, and the COST Action CM1401 "Our Astrochemical History". 29 Aug – 9 Sep 2016, Grenoble, France. dr Stanka Jerosimić.

5. 2<sup>nd</sup> International Meeting on Materials Science for Energy Related Application, Scientific Committee member, Belgrade, September 29-30 2016. dr Igor Pašti



## Uređivanje međunarodnog naučnog časopisa

1. Područni urednik za fizičku hemiju za časopis Journal of the Serbian Chemical Society, Ljiljana Damjanović
2. PHYSICAL CHEMISTRY 2016 (Proceedings), SPCS, Belgarde (2016), Vol.1 and Vol.2 (1916) V. (ISBN 978-86-82475-34-7; ISBN 978-86-82475-33-0). Slobodan Anić.

## Patenti

1. M. Vujković, I. Stojković-Simatović, N. Cyjetićanin, S. Mentus,  $\text{LiFe}_{0.95}\text{V}_{0.05}\text{PO}_4/\text{C}$  composite as electrode material for secondary rechargeable Li-ions batteries with aqueous electrolytic solutions, Priznat 18.12.2015. Br. Patenta. 54346
2. Patent br. 54982 (Patentna prijava P-2012/0584)- Gavrilov Nemanja, Pašti Igor, Krstić Jugoslav, Ćirić-Marjanović Gordana, Mentus Slavko, „Sinteza nanodispergovanog kompozita volfram karbida i ugljenika metodom istovremene redukcije i karburizacije  $\text{WO}_3$  pomoću ugljeničnog materijala bogatog kovalentno vezanim azotom“.
3. I. Pašti, T. Lazarević-Pašti, V. Vasić, B. Babić, Uklanjanje organofosfatnih pesticida iz vode primenom uređenih mezoporoznih ugljenika dopiranih sa borom, azotom i fosforom i filter za vodu koji koristi ove materijale za uklanjanje organofosfatnih pesticida iz pijaće vode, patentna prijava P-2015/0693.

## Nagrade

1. M. Perić, S. Jerosimić, M. Mitić, M. Milovanović, R. Ranković Underlying theory of a model for the Renner–Teller effect in tetra-atomic molecules:  $X^2\Pi_u$  electronic state of  $\text{C}_2\text{H}_2^+$  *The Journal of Chemical Physics* 142 (2015) 174306 (2015) 1–14
2. M. Mitić, R. Ranković, M. Milovanović, S. Jerosimić, M. Perić Underlying theory of a model for the Renner–Teller effect in any-atomic linear molecules on example of the  $X^2\Pi_u$  electronic state of  $\text{C}_5^-$  *Chemical Physics* 464 (2016) 55–68.
3. B. Kasalica, J. Radić-Perić, M. Perić, M. Petković-Benazzouz, I. Belča, M. Sarvan The mechanism of evolution of microdischarges at the beginning of the PEO process on aluminum *Surface & Coatings Technology* 298 (2016) 24–32.
4. 4.Serbian Chemical Society je dodelila dr Jeleni Jovanovic za najbolju prezentaciju postera “ADVANCED CERAMICS AND APPLICATIONS V “ održanoj 21-23 September 2016, Beograd.
6. Fond Nenada M. Kostića za hemijske nauke pohvaljuje prof. Stanku V. Jerosimić za uspeh u mentorskom radu, maj 2016.
5. Maja Milojević-Rakić Druga nagrada „Docent dr Milena Dalmacija” za doktorsku disertaciju koja je dala najveći naučni doprinos iz oblasti zaštite životne sredine na univerzitetima u Republici Srbiji za period od 1.10.2013. do 30.09.2016.

## Predavanje po pozivu sa radionice međunarodnog značja štampano u izvodu

1. M. Petković, D. Vidović, Formation and Oxidation of a P-C<sub>carbone</sub> bond, Workshop Innovative Surfaces and Materials, August 28 to 31, Primošten, Croatia, Book of Abstracts, p13.

## Jubileji

1. Povodom sedamdesete (70.) godišnjice rođenja dr Slobodana Anić izdata je posebna sveska No. 1) međunarodnog časopisa: Reaction Kinetics, Mechanisms and Catalysis, 188 (2016) 1-348. [Ž. Čupić, Editorial, Reaction Kinetics, Mechanisms and Catalysis, 188 (2016) 1-4; G. Schmitz, Historical overview of the Oscillating Reaction. Contribution of Professor Slobodan Anić, Reaction Kinetics, Mechanisms and Catalysis, 188 (2016) 5-14.]