

Curriculum Vitae



Personal information

First name(s) / Surname(s) **Milica Vujković**
Address(es) Studentski trg 12-16, 11158 Belgrade, Serbia
Telephone(s) (381-11) 3336-630
E-mail milica.vujkovic@ffh.bg.ac.rs
Date of birth 28.01.1983.

Work experience

Dates 01.2009.-present
Current position Senior Research Associate
Name and address of employer Faculty of Physical Chemistry, University of Belgrade, Studentski trg 12-16, Belgrade, Serbia

Education and training

Dates 28.01.2013.
Title of qualification awarded PhD thesis: "Influence of synthetic condition of both $\text{Li}_4\text{Ti}_5\text{O}_{12}/\text{C}$ and LiFePO_4/C composites on the kinetics of intercalation of lithium ions in organic and aqueous electrolytic solutions".
Advisor: Prof. Slavko Mentus. Average grade: 10 (out of 10).
Name and type of organisation Faculty of Physical Chemistry, University of Belgrade

Dates 2001-2006
Title of qualification awarded Graduate studies, average grade: 9.33 (out of 10)
Name and type of organisation Faculty of Physical Chemistry, University of Belgrade

Dates 1997-2001
Title of qualification awarded High school
Name and type of organisation Gymnasium "Stojan Cerović", Nikšić, Republic of Montenegro

Research activities (June 29, 2020)

39 scientific papers (36 in the international and 3 the national scientific journals) and more than 40 conference papers
1 book chapter, 2 nationally approved patents and 1 national patent application.
875 citates according to the Google Scholar's (September 26, 2021), h-index 17.
Reviewer of around 100 papers for *Electrochimica Acta*, *Journal of Power Sources*, *Scientific Reports*, *Waste Management*, *RSC Advances*, *Materials Today Energy*, *Journal of Alloys and Compounds*, *Synthetic Metals* and so on.

Teaching activities

- International lecturers** Lecturer for Erasmus Mundus Joint Master Degree Materials – Materials for Energy Storage & Conversion (MESC+ program), Class#15. On-line teaching course on electrochemical processes in batteries and supercapacitors (December 2020/January 2021).
Visiting Lecturer at the University of Montenegro - Faculty of Metallurgy and Technology: two intensive courses for undergraduate, graduate and postgraduate students:
1. Intercalation materials for Li-ion batteries (1.11.-30.11. 2020),
2. Electrode materials for supercapacitors (1.12-30.12-2020)
- Mentorship/co-mentorship** Supervisor of one PhD thesis in the field of recycling technology of lithium-ion batteries, completed at the Faculty of Physical Chemistry, University of Belgrade (candidate: Dr. Jelena Senćanski)
Currently supervising PhD student Tamara Petrović at the Faculty of Physical Chemistry
Currently supervising visiting PhD student Aleksandra Gezović, PhD student at the Faculty of Metallurgy and Technology, University of Montenegro
Advisor/Co-advisor of 11 master and 7 diploma theses at the Faculty of Physical Chemistry.
- Summer school** Supervisor of three undergraduate students - the summer school in the field of Li-ion batteries and carbon supercapacitors.
- Courses** As a Visiting Professor at University of Montenegro - Faculty of Metallurgy and Technology, she held two intensive courses for undergraduate, graduate and postgraduate students:
1. Intercalation materials for Li-ion batteries (1.11.-30.11. 2020)
2. Electrode materials for supercapacitors (1.12-30.12-2020)
- Invited Lectures** "Lithium-ion batteries: Paste, Present and Future", 07.11.2019, The Multimedia Hall of the University Sport and Cultural Centre, Podgorica, Montenegro.
"Alkaline-ion batteries: Research and Development, 5th Conference on Transport and Research in the Danube Region, 13-14 November, 2018, Ljubljana, Slovenia (invited lecture and panel discussion).
"Comparison of sodium and lithium intercalation materials", Electrochemical Section of the Serbian Chemical Society at the Faculty of Technology and Metallurgy, University in Belgrade, 10th November, 2014, Belgrade, Serbia.
"Contemporary trends in the development of Li-ion batteries", Foundation of Ilija M. Kolarac, Belgrade, Serbia within the cycle - Energy of Future, 10th October, 2014.
"Development of nanostructured materials for Li-ion batteries", ICEMS, Instituto Superior Te'cnico, TU Lisbon, Av. Rovisco Pais, 1049e001 Lisboa, Portugal, 21st November, 2013.
- Additional activities** Member of Belgrade School of Electrochemistry
Member of Serbian Chemical Society and Physical Chemical Society
One of the battery symposium organizers at 71st ISE Belgrade online meeting in 2020.

Projects *Scientific projects*

2021-2024: SUPERCAR - "Carbon-based Batteries and Supercapacitors", funded by NATO-Science for Peace and Security (SPS) Programme, G5836, 01.04.2021-1.04.2024, Slovenia, Serbia and Montenegro, coordinator from the Serbian side.

2020-2021 Novel approach for designing V₂O₅-Based graphene nanocomposites: Enhanced energy storage and photocatalytical properties, Innovation Serbian project 5619, funded by the Innovation Fund of the Republic of Serbia, 1.06.2020-1.06.2021, external expert.

2020-2022 High-capacity electrodes for aqueous rechargeable multivalent-ion batteries and supercapacitors: next step towards a hybrid model (HISUPERBAT), National project, No. 6062667, funded by the Science Fund of the Republic of Serbia, coordinator.

2020-2022 Green chemistry for sustainable energy: Biomass-derived carbon as electrode for energy storage, funded by the Ministry of Science of Montenegro, 1.05.2020 -30.04.2022, participant.

2020-2021: Green chemistry for clean energy: Novel cost-effective carbon catalyst prepared from ionic liquid for hydrogen production, Innovation Serbian project, funded by the Innovation Fund of the Republic of Serbia, 1.06.2020-1.06.2021, participant.

November-December 2020: "Materials for Energy Storage", funded by the Ministry of Science Montenegro, a visiting lecturer.

2019-2020: Bilateral Project "Development of ecological Li-ion batteries", between Serbia and Montenegro, coordinator of the Serbian team.

2018-2020: Bilateral Project "Developments of novel materials for alkaline-ion batteries", between Serbia and Slovenia, coordinator of the Serbian team.

2015-2018: Project "DURAPEM-Novel Materials for Durable Proton Exchange Membrane Fuel Cells", NATO-Science for Peace and Security (SPS) Programme, G4925, Slovenia and Serbia, participant.

2013-2015: Bilateral Project: "Transition metal oxides as electrode materials for lithium ion batteries", between Serbia and Portugal, participant.

2011-2019: "Li-ion batteries and fuel cells: Research and Development", National project, funded by Ministry of Education, Science and Technological Development of the Republic of Serbia, coordinated by prof. Slavko Mentus, participant.

2009-2011 "Physical chemistry of dynamic states and structure of nonequilibrium systems-from monotonic to oscillatory evolution and chaos", National project, funded by Ministry of Education, Science and Technological Development of the Republic of Serbia, participant.

Non-scientific projects

Project "Science in Motion for Friday Night Commotion 2014-2015" (SCIMFONICOM 2014-2015. HORIZON 2020- MSCA-NIGHT-633376), participant.

- Awards and recognitions
- 2019- Đoke Vlajkovića Foundation Award for the best scientific paper of young scientists at the University of Belgrade in 2018.
 - 2015- The Award of the Commerce Chamber of Belgrade for the best patent in 2013/2014 which is in the interest to the economy of Belgrade
 - 2014- The Award of the Commerce Chamber of Belgrade for the best PhD thesis in 2012/2103 which is in the interest to the economy of Belgrade.
 - 2013- The Award for the best thesis at the Yucomat 2013 conference held in Montenegro, Republic Montenegro.
 - 2007- Special recognition of Serbian Chemical Society for outstanding achievement during the undergraduate studies 2001-2006.

Additional information

- National Patents
- Milica Vujković, Slavko Mentus, Procedure for increasing the capacitance of supercapacitor with nanodispersed carbon electrodes in alkaline electrocatalytic solution, Accepted patent, P-2018/0314.
 - N. Gavrilov, M. Vujković, I. Pašti, G. Ćirić-Marjanović, S. Mentus, Supercapacitor based on carbon nanostructure with aqueous electrolytic solution, 2011/0565, Accepted patent 7,07,2014. No. 53366.
 - M. Vujković, I Stojković, N. Cvjetičanin, S. Mentus, LiFe_{0.95}V_{0.05}PO₄/C composite as electrode material for secondary lithium-ion batteries with aqueous electrolytic solution, 2012/0243, Accepted patent 18,12,2015. No 54346.

The most relevant publications

1. A. Gezović#, **M. J. Vujković#,***, M. Milović, V. Grudić, R. Dominko, S. Mentus, Recent developments of $\text{Na}_4\text{M}_3(\text{PO}_4)_2(\text{P}_2\text{O}_7)$ as the cathode material for alkaline-ion rechargeable batteries: challenges and outlook, *Energy storage materials*, 37, 2021, 243-273. IF2020 =17.789.
2. **M. J. Vujković**, M. Etinski, B. Vasić, B. Kuzmanović, D. Bajuk-Bogdanović,, R. Dominko, S. Mentus, Polyaniline as a charge storage material in an aqueous aluminum-based electrolyte: Can aluminum ions play the role of protons?, *Journal of Power Sources*, 482 (2021) 228937. IF2019 =9.127.
3. **M. Vujković**, D. Bajuk-Bogdanović, Lj. Matović, M. Stojmenović, S. Mentus, Mild electrochemical oxidation of zeolite templated carbon in acidic solutions, as a way to boost its charge storage properties in alkaline solutions, *Carbon*, 138 (2018) 369; IF2018=7.466.
4. **M. Vujković**, S. Mentus, Potentiodynamic and galvanostatic testing of $\text{NaFe}_{0.95}\text{V}_{0.05}\text{PO}_4/\text{C}$ composite in aqueous NaNO_3 solution, and the properties of aqueous $\text{Na}_{1,2}\text{V}_3\text{O}_8/\text{NaNO}_3/\text{NaFe}_{0.95}\text{V}_{0.05}\text{PO}_4/\text{C}$ battery, *J. Power Sources*, 325 (2016) 185; IF2016=6.395.
5. **M. Vujković**, S. Mentus, High-rate intercalation capability of $\text{NaTi}_2(\text{PO}_4)_3/\text{C}$ composite in aqueous lithium and sodium nitrate solutions, *J. Power Sources*, 288 (2015) 176-186. doi:10.1016/j.jpowsour.2015.04.132. (IF2016=6.395).
6. **M. Vujković**, S. Mentus, Fast sodiation/desodiation reactions of electrochemically delithiated olivine LiFePO_4 in aerated aqueous NaNO_3 solution, *J. Power Sources*, 247 (2014) 184-188. doi:10.1016/j.jpowsour.2013.08.062. (IF2014=6.217).
7. **M. Vujković**, I. Stojković, N. Cvjetičanin, S. Mentus, Gel-combustion synthesis of LiFePO_4/C composite with improved capacity retention in aerated aqueous electrolyte solution, *Electrochimica Acta*, 92 (2013) 248-256. (IF2013=4.056).