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
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Date of birth	28.01.1983.

Field of interest

Energy storage & conversion concepts. Development of various materials for energy-related applications: i) intercalation materials for metal-ion rechargeable batteries; ii) carbon materials for developments of batteries, supercapacitors, water electrolysis and fuel cells.

Work experience

Dates	01.2009.-present 2007 – 2009 Center for ecotoxicological researches of Montenegro, Podgorica, Montenegro, (instrumental analyst) 2009 - University of Belgrade - Faculty of Physical Chemistry (researcher).
Current position	Senior Research Associate
Name and address of employer	University of Belgrade - Faculty of Physical Chemistry, 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 $Li_4Ti_5O_{12}$/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).
Principal subjects/occupational skills covered	Physical Chemistry of Materials and Electrochemistry - the field of Li-ion batteries
Name and type of organisation	University of Belgrade - Faculty of Physical Chemistry
Dates	2001-2006
Title of qualification awarded	Graduate studies, average grade: 9.33 (out of 10)
Principal subjects/occupational skills covered	Physical Chemistry
Name and type of organisation	University of Belgrade - Faculty of Physical Chemistry
Dates	1997-2001
Title of qualification awarded	High school
Name and type of organisation	Gymnasium "Stojan Cerović", Nikšić, Republic of Montenegro

Technical skills and competences	Electrochemical methods: cyclic voltammetry, chronopotenciometry, chronoamperometry, galvanostatic intermittent titration technique, potentiostatic intermittent titration technique, impedance measurements, galvanostatic charging/discharging method... Scanning Electron Microscope (Phenom ProX) High Performance Liquid Chromatography systems (SPD-DAD, SPD-UV, RF and RI detectors) UV/VIS spectrophotometer with Diode array detector and Stopped-flow apparatus (used for investigation of the kinetics of ultra- fast chemical reactions).
Research activities (June 29, 2020)	38 scientific papers (35 in the international and 3 the national scientific journals) and more than 40 conference papers 1 book chapter, 3 nationally approved patents. 829 citates according to the Google Scholar's (May 9, 2021), h-index 16. Reviewer of 89 papers for Electrochimica Acta, Journal of Power Sources, Scientific Reports, ChemElectroChem, Waste Management, RSC Advances, Materials Today Energy, Journal of Cleaner Production and so on.
Teaching- invited lecturer	
	Lecturer for Erasmus Mundus Joint Master Degree Materials – Materials for Energy Storage & Conversion (MESC+ program). 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. Currently supervising two PhD students. 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.
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	One of the battery symposium organizers at 71st ISE Belgrade in 2020 (online meeting). Member of Belgrade School of Electrochemistry Member of Serbian Chemical Society Member of Physical Chemical Society

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 and Serbia, coordinator from the Serbian side.

2020-2021 Novel approach for designing V_2O_5-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 HISUPERBAT - High-capacity electrodes for aqueous rechargeable multivalent-ion batteries and supercapacitors: next step towards a hybrid model, National project, No. 6062667, funded by the Science Fund of the Republic of Serbia, 01.08.2020-1.08.2022, 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, No. 5252, 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 nonequlibrium 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.

Project "Science in Motion for Friday Night Commotion 2013" (SCIMFONICOM 2013, FP7-PEOPLE-2013-NIGHT), 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, Approved patent, 20.10.2020, No. 60893.

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. Cvjetićanin, S. Mentus, $LiFe_{0.95}V_{0.05}PO_4$/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 $Na_4M_3(PO_4)_2(P_2O_7)$ as the cathode material for alkaline-ion rechargeable batteries: challenges and outlook, Energy storage materials, 37, 2021, 243-273. IF2019 =16.280.

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 =8,247.

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. J. Senćanski, D. Bajuk-Bogdanović, D. Majstorović, E.Tchernychova, J. Papan, **M. Vujković***, The synthesis of $Li(Co-Mn-Ni)O_2$ cathode material from spent-Li ion batteries and the proof of its functionality in aqueous lithium and sodium electrolytic solutions, J. Power Sources 342 (2017) 690; IF2017=6.945.

5. Z. Jovanović* D. Bajuk-Bogdanović, S. Jovanović, Ž. Mravik, J. Kovač, I. Holclajtner-Antunović, **M. Vujković**, *The role of surface chemistry in the charge storage properties of graphene oxide*, Electrochimica Acta 258 (2017) 1228; IF2017=5.116.

6. Z. Jovanović*, I. Holclajtner-Antunović, D. Bajuk-Bogdanović, S. Jovanović, Ž. Mravik, **M. Vujković**, *Effect of thermal treatment on the charge storage properties of graphene oxide/12-tungstophosphoric acid nanocomposite*, Electrochemistry Communications 83 (2017) 36; IF2017=4.660.

7. M. Vujković, S. Mentus, Potentiodynamic and galvanostatic testing of $NaFe_{0,95}V_{0,05}PO_4$/C composite in aqueous $NaNO_3$ solution, and the properties of aqeuous $Na_{1,2}V_3O_8/NaNO_3/NaFe_{0,95}V_{0,05}PO_4$/C battery, J. Power Sources, 325 (2016) 185; IF2016=6.395.

8. M. Vujković, S. Mentus, High-rate intercalation capability of $NaTi_2(PO_4)_3$/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).

9. 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).

10. M. Vujković, I. Stojković, N. Cvjetićanin, 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).