

## Curriculum Vitae

### Dr. Dubravka Milovanović, Associate Research Professor

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Born: July 20<sup>th</sup> 1976.

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### EDUCATION

University of Belgrade, Faculty of Physical Chemistry - Bachelor of Science 2003, Graduate thesis: "Influence of mechanochemical synthesis on properties of hydroxyapatite/polymer composite biomaterials".

University of Belgrade, Faculty of Physical Chemistry – MSc in Physical Chemistry 2006, master thesis "Photoacoustic spectroscopy of commercial pesticide Malathion in the CO<sub>2</sub> laser emission region" University of Belgrade, Faculty of Physical Chemistry – PhD in Physical Chemistry 2013, doctoral thesis "Interaction of nanosecond and picosecond pulsed laser irradiation with Ti6Al4V alloy surface".

### PROFESSIONAL EXPERIENCE

2003 – 2006 research apprentice Vinča Institute of Nuclear Sciences, Department of Physical Chemistry, Belgrade, Serbia

2006 – 2013 research associate Vinča Institute of Nuclear Sciences, Department of Physical Chemistry, Belgrade, Serbia

2013 – 2017 research assistant professor and quality manager for ISO 9001 and ISO/IEC 17025 standards, Belgrade, Serbia

2015 – 2017 deputy director of the Department of Physical Chemistry Vinča Institute of Nuclear Sciences, Belgrade, Serbia

2017 – 2019 head of the Department of Physical Chemistry, Vinča Institute of Nuclear Sciences, Belgrade, Serbia

2019 – associate research professor, Institute of General and Physical Chemistry, Belgrade, Serbia

### PROJECTS

2022 Research topic: Materials physical chemistry - Development of materials for efficient production of hydrogen by alkaline electrolysis and use in hydrogen and alcohol fuel cells", Ministry of Education, Science and Technological Development of the Republic of Serbia Contract No. 200051

2021 Research topic: "Development of materials for efficient production of hydrogen by alkaline electrolysis and use in hydrogen and alcohol fuel cells", Ministry of Education, Science and Technological Development of the Republic of Serbia, Contract No. 451-03-9/2021-14/200051

2020 Research topic: "Development of materials for efficient production of hydrogen by alkaline electrolysis and use in hydrogen and alcohol fuel cells", Ministry of Education, Science and Technological Development of the Republic of Serbia, Contract No. 451-03-68/2020-14/ 200051

2019 "Hydrogen energy - development of new materials: electrolytic production hydrogen, hydrogen fuel cells", Ministry of Education, Science and Technological Development of the Republic of Serbia, Project No. 172045

2018-2019. Project Leader „Site investigation services related to full-sized a project to implement an environmentally sound management and final disposal of PCBs in the Republic of Serbia“, UNIDO Project No. 100313

2011 – 2019 "The effects of laser radiation and plasma on contemporary materials in their synthesis, modification and analysis" – the leader of subproject "Laser radiation of materials", Ministry of Education, Science and Technological Development of the Republic of Serbia, Project No. 172019

2011-2019 "Generation and characterization of nanophotonic functional structures in biomedicine and informatics ", subproject" Synthesis and modification of nanocomposite, metallic, semiconductor and organic materials ", Ministry of Education, Science and Technological Development of the Republic of Serbia, Project III 45016

2011 - 2012 "Synthesis and modification of titanium-based nanocomposites with ion and laser beam" - bilateral cooperation with Croatia, a project funded by the Ministry of Science and technological development of the Republic of Serbia,, participant

2010 - 2014 Joint project of the Serbian Academy of Sciences and the Romanian Academy of Sciences "Research on Fundamental Processes in Laboratory Plasmas"

2006-2010 "Spectroscopic and isotopic research of systems (eco-, bio-, techno-)", Ministry of Science and Environmental Protection of the Republic of Serbia, Project No. 1995

2006-2007 "Modification of thin layers at the micro- and nanometer level" - bilateral cooperation with Slovenia, a project funded by the Ministry of Science and Environmental Protection Of Serbia

2003-2005 "Spectroscopic and laser research of surfaces, plasma and environment", Ministry of Science and Technological Development of the Republic of Serbia, Project No. 142065

**Language:** English (fluent)

**Research field and area:**

Laser processing of materials – the modification and synthesis of semiconductors, metals, alloys and thin layers

Renewable energy sources, with an emphasis on the development of promising catalysts, applicable for direct alcohol fuel cells (DAFC) for portable and mobile applications

Environmental protection – detection, identification and decontamination of pollutants

**THE MOST RELEVANT PUBLICATIONS**

1. Dubravka Milovanović, Boris Rajčić, Sanja Petronić, Aleksandra Radulović, Bojan Radak, Biljana Gaković, Marian Zamfirescu, Catalina Albu, and Jelena Savović, "Comprehensive ablation study of near-IR femtosecond laser action on the titanium-based alloy Ti6Al4V: morphological effects and surface structures at low and high fluences", *European Physical Journal D* (2022) 76:2

2. Milica P. Marceta Kaninski, Zoran V. Saponjic, Mihajlo D. Mudrinic, Dubravka S. Milovanovic, Boris M. Rajcic, Aleksandra M. Radulovic, Vladimir M. Nikolic, "Comparison of Pt and Pd anode catalysts supported on nanocrystalline RuSnO<sub>2</sub> for ethanol oxidation in fuel cell applications", *International Journal of Hydrogen Energy*, **46(77)** (2021) 38270-38280

3. M. Kuzmanovic, A. Stancalie, D. Milovanovic, A. Staicu, Lj. Damjanovic-Vasilic, D. Rankovic, J. Savovic, "Analysis of lead-based archaeological pottery glazes by laser induced breakdown spectroscopy", *Optics and Laser Technology* **134** (2021) 106599

4. S. Petronić, K. Čolić, B. Đorđević, D. Milovanović, M. Burzić, F. Vučetić, "Effect of laser shock peening with and without protective coating on the microstructure and mechanical properties of Ti-alloy", *Optics and Lasers in Engineering* **129** (2020) 106052

5. S.I. Kudryashova, N.A. Smirnov, B.Gakovic, D.Milovanovic, S.G. Bezhanov, S.A. Uryupin, A.A. Ionin, "Dependence of the Two-Photon Absorption Coefficient of Steel on the Pulse Duration During Its Ablation by Femto- and Picosecond Laser Pulses", *JETP Letters* **110** (2019) 107–110

6. V. Nikolić, S. Karić, Ž. Nikolić, M. Tošić, G. Tasić, D. Milovanović, M. Marčeta Kaninski, "Novel photochemical advanced oxidation process for the removal of polycyclic aromatic hydrocarbons from polluted concrete", *Chemical Engineering Journal*, Elsevier, 312, pp. 99 – **105** (2017) 1385-8947

7. M. Trtica, J. Limpouch, P. Gavrilov, L. Gemini, P. Panjan, J. Stasic, D. Milovanovic, G. Brankovic, Surface modification of a-CN/TiAlN double layer coating on ASP 30 steel induced by femtosecond laser with 10<sup>13</sup>–10<sup>14</sup> W/cm<sup>2</sup> intensity in vacuum, *Laser and Particle Beams* **33** (2015) 551–559.

8. D.S. Milovanović, B. Gaković, C. Radu, M. Zamfirescu, B. Radak, S. Petrović, Z. Rogić Miladinović and I.N. Mihailescu, Femtosecond laser surface patterning of steel and titanium alloy, *Phys. Scr.* **T162** (2014) 014017

9. D.S. Milovanovic, S.M. Petrovic, M.A. Shulepov, V. Tarasenko, B.B. Radak, S.S. Miljanic, M.S. Trtica, Titanium alloy surface modification by excimer laser irradiation, *Optics & Laser Technology* 54 (2013) 419–427

10. D.S. Milovanović, B.B. Radak, B.M. Gaković, D. Batani, M.D. Momčilović, M.S. Trtica, "Surface morphology modifications of titanium based implant induced by 40 picosecond laser pulses at 266 nm", *Journal of Alloys and Compounds* **501** (2010)