

Curriculum Vitae

Jelena Jovanovic, PhD, Principal research fellow

(ORCID ID):

<https://orcid.org/0000-0002-3285-2289>;

<https://orcid.org/0000-0002-7537-9591>

Born: 05/10/ 1960 , Belgrade, SFRJ

Contact details e-mail: jelenaj@iofh.bg.ac.rs ; jelenajov2000@yahoo.com, phone: +381 64 1651 266, Institute of General and Physical Chemistry, Studentski trg 12-16, 11158 Belgrade 118, Republic of Serbia

EDUCATION

1993 - Philosophy Doctor (Doctor of Chemical Science)

Title of Ph.D. thesis: “Investigation of the syntheses and properties of α , ω -telechelic oligopolysiloxanes with trimethyl- and dimethylvinylsilyl- groups, Faculty of Natural and mathematical Science, Department of Chemistry, Belgrade University.

1989 - Masters degree of technical science (M.Sc. of Technical sciences)

Title of M.S. thesis: *Investigation of carbohydrates using kinetics methods. Reaction of pentaacetate β -D-glucose catalyzed by enzymes*, Faculty of Technology and Metallurgy, Belgrade University (Department of Organic Chemistry, Organic Reaction Mechanisms Group)

1985 - Bachelor of Science (Chemical engineer)

Title of B.S. thesis. *Investigation of the kinetics of solvolysis of chloromethyl-pyridine isomers*, Faculty of Technology and Metallurgy, Belgrade University (Department of Organic Technology, Industrial Organic Syntheses Group)

PROFESSIONAL EXPERIENCE

1. Employment

2019 – up to now. *Principal research fellow*

Institute of General and Physical Chemistry, Belgrade

2010 – 2019. *Principal research fellow (equivalent to Full professor)*

University of Belgrade, Faculty of Physical Chemistry,

2005-2010. *Senior Research Associate*

University of Belgrade, Faculty of Physical Chemistry,

2003-2005. *Research Associate*

Institute of technical Science, Serbian Academy of Science and Art, Belgrade

2000 - 2003. *Research Associate, Head of the laboratory for polymers and detergents*

Institute of General and Physical Chemistry, University of Belgrade

1994 - 2000. *Research Associate, Head of the subproject*

Institute of General and Physical Chemistry, University of Belgrade

1991- 1994. *Research Assistant, Expert associate*

ICN Galenika, Institute, Belgrade

1988- 1991. *Research Assistant*

2. Mobility

2017- *Short term scientific mission*, POLYMAT, San Sebastian, Spain, July 2017.

Collaboration work on: "Synthesis and characterization of 3D graphene/polymer composite sponge-like materials"

2017- 2020, *Visiting Full professor*, Faculty of Biotechnical Engineering, Bitola, Saints Cyril and Methodius University of Skopje, F.R.Macedonia

1997-1998. *Research Associate*, several visiting, Mira Zeolite, Copolymer Plant, Vicenza, Italy

1988-1993. *Research Assistant*, Institute of Chemistry, Technology and Metallurgy, Department of Macromolecules, Belgrade

1986 -1988. *Teaching assistant*, Faculty of Technology and Metallurgy, Department of Organic Chemistry, Belgrade University

3. Additional information

External expert of European Commission - evaluation of proposals for FP7, HORIZONT-2020, COST Action, from 2008 until now.

Invited lectures: „Hydrogels as smart materials“, Faculty of Physical Chemistry, BU, 2008-2019.

Reviewer of Scientific Journals: Journal of Applied Polymer Science / Thermochemica Acta / Journal of Thermal Analyses and Calorimetry/ Polymer /Engineering and Science, Journal of Colloid and Surface Science, / International Research Journal of Pure and Applied Chemistry / International Journal of Applied Polymer Science /Chemical Industry/etc.

Membership of professional bodies: Physical-chemical society of Serbia / Serbian chemical Society /Society of engineers, plasticizers and rubbers of Serbia /

Co-mentoring and member of BSc, MSc, Mr and PhD thesis at Faculty of Physical Chemistry, Faculty of Chemistry and Faculty of Technology and Metallurgy, Belgrade University

Member of scientific and organization committees for international conferences: Physical Chemistry from 2010 to 2018, Belgrade, Macromolecules 2008, Vrsac, Serbia

Honors: Award for best presentation: "The Fifth Serbian Ceramics Society Conference - ADVANCED CERAMICS AND APPLICATIONS V", Serbian Academy of Science and Arts, **2016**.

PROJECTS

PARTICIPATION IN NATIONAL PROJECTS

1. [Dynamics of nonlinear physicochemical and biochemical systems with modeling and predicting of their behavior under nonequilibrium conditions](#), Ministry of Education, Science and Technological Development of Republic of Serbia. Project No. OI 172015 (2010-2020). (Dinamika nelinearnih fizičko-hemijskih i biohemijskih sistema sa modeliranjem i predviđanjem njihovih ponašanja pod neravnotežnim uslovima. Projekat br.172015, Ministarstvo nauke i prosvete. Rukovodilac-Lj.Kolar-Anić.)
2. [Physical chemistry of dynamic states and structures of nonequilibrium systems - from monotone to oscillatory evolution and chaos](#). Ministry of science and environmental protection. Project No. 142025 (2005-2010) (Fizička hemija dinamičkih stanja i struktura neravnotežnih sistema-od monotone do oscilatorne evolucije i haosa, Projekat br.142025, Ministarstvo nauke i zaštite životne sredine. Rukovodilac-Lj.Kolar-Anić).

3. [Production and application of ethyl alcohol as an energy source TD-7084 B, Ministry of Science and Environment. \(Prozvodnja i primena etil alkohola kao energenta TD-7084 B, Ministarstvo nauke i životne sredine. Rukovodilac B. Adnađević\) \(2005-2007\).](#)
4. [Physical chemistry of dynamic states and structures of nonequilibrium systems - self-organization, multi-stability and oscillatory states. Ministry of science and environmental protection. Project No.1448 \(2000-2005\). Fizička hemija dinamičkih stanja i struktura neravnotežnih sistema – samoorganizacija, multistabilnost i oscilatornost, Projekat broj 1448, Ministarstvo za nauku i zaštitu životne sredine. Rukovodilac-Lj.Kolar-Anić \(2000-2005\).](#)
5. [Synthesis and modification and characterization of synthetic and natural polymeric materials, Ministry of Science and Technology of the Republic of Serbia, \(Sinteza i modifikacija i karakterizacija sintetskih i prirodnih polimernih materijala, Ministarstvo za nauku i tehnologiju Republike Srbije, Rukovodilac I.Popovic\) \(2002-2004\).](#)
6. [Molecular design of monolithic and composite materials, Ministry of Science and Technology of the Republic of Serbia \(Molekularno dizajniranje monolitnih i kompozitnih materijala, Ministarstvo za nauku i tehnologiju Republike Srbije, Rukovodilac D.Uskokovic\) \(2002-2004\).](#)
7. [BIOPHYSICS, Ministry of Science and Technology of the Republic of Serbia, \(BIOFIZIKA, Ministarstvo za nauku i tehnologiju Republike Srbije, "BIOFIZIKA", Ministarstvo za nauku i tehnologiju Republike Srbije, Rukovodilac D.Vučelic\) \(1995-1999\).](#)
8. [Development of polymer composite membranes for use in liquid and gaseous separation processes, Ministry of Science, Technology and Development, \(Razvoj polimernih kompozitnih membrana za primenu u procesima tečne i gasovite separacije, Ministarstvo za nauku, tehnologiju i razvoj\) \(1993-1994\).](#)
9. [Two-component silicone systems for vulcanization at room temperature, Federal Ministry of Science, Technology and Development, \(Dvokomponenti silikonski sistemi za vulkanizovanje na sobnoj temperaturi, Savezno Ministarstvo za nauku, tehnologiju i razvoj\) \(1993\).](#)
10. [Production of crosslinked copolymers of styrene and 4-vinylpyridine for selective separation of metal ions from aqueous solutions, Federal Ministry of Science, Technology and Development, \(Proizvodnja umreženih kopolimera stirena i 4-vinilpiridina za selektivno izdvajanje jona metala iz vodenih rastvora", Savezno Ministarstvo za nauku, tehnologiju i razvoj\), \(1993\).](#)
11. [Investigation and development of new oligopolysiloxanes with reactive end groups, "RFTR of Serbia" \(Ispitivanje i razvoj novih oligopolisiloksana sa reaktivnim završnim grupama, "RFTR Srbije\) \(1991-1992\).](#)
12. [Research and development of technologies for obtaining composite materials based on high-strength carbon and other polymer machined fibers," RFTR of Serbia "\(Istraživanje i razvoj tehnologija dobijanja kompozitnih materijala na bazi visoko čvrstih ugljeničnih i drugih polimernih mašinski obradjenih vlakana", "RFTR Srbije"\), \(1991-1993\).](#)
13. [Interactions of natural minerals with organic and inorganic radicals - Subproject - Research and development of products and procedures in the field of technology and water treatment "RFTR Srbije" \(Interakcije prirodnih minerala sa organskim i neorganskim radikalima - Podprojekat - Istraživanje i razvoj proizvoda i postupaka u oblasti tehnologije i obrade vode "RFTR Srbije"\) \(1991-1995\).](#)
14. [Obtaining and applying polymeric materials in pharmacy and medicine, RO Galenika - RZ Research and development, engineering and quality control, Belgrade, Federal Project, \(Dobijanje i primena polimernih materijala u farmaciji i medicini, RO Galenika -](#)

RZ Istraživanje i razvoj, inženjering i kontrolu kvaliteta, Beograd, Savezni projekat, (1988-1991).

15. [Obtaining and application of polymers in dentistry, UN Belgrade](#), (Dobijanje i primena polimera u stomatologiji, OZN Beograd), (1987-1988).

PARTICIPATION IN INTERNATIONAL PROJECTS

1. Bilateral Project Serbia-China, Preparation of high-grade synthetic rutile from titania slag under microwave heating, Ministry of Education, Science and Technological Development of Republic of Serbia. Project No. 6ICZSD, (2015-2017).
2. European Cooperation in Science and Technology, COST Action CM1304, Emergence and Evolution of Complex Chemical Systems, (2013-2017).
3. European Cooperation in Science and Technology, COST Action CA15107, MULTI-FUNCTIONAL NANO-CARBON COMPOSITE MATERIALS NETWORK (MultiComp), (2016-2020).

Language: Serbian (native), English ([proficiency](#)), Germany ([middle](#)), French ([basic](#))

Research field and area:

The main academic and scientific career of Dr J. Jovanovic is extensive and covers several areas: synthesis of new materials, polymers, polymer composites, carbon composite materials, hydrogels, smart materials. Synthesis with special emphasizes on non-conventional synthesis, e.g. under microwaves, ultrasonic, or cavitation. Green chemistry synthesis and physico-chemical processes. Synthesis of various types of polymers, composites and hydrogels both under conventional and unconventional conditions. She works extensively on the investigation of the effects of different fields on reaction kinetics of chemical and physico-chemical processes. Hydrogels swelling properties and kinetics, dehydration kinetics and drug-delivery kinetics using up-to date and novel methods are extensively involved. The isothermal and non-isothermal kinetics analyses of various physicochemical processes and chemical reaction (adsorption, polymerization, extraction, dehydration). Dr J. Jovanovic worked on the development of new physicochemical processes and (catalytic conversion of biological material into biofuels, per vaporization, cavitation esterification and transesterification, hydrothermal conversion of biomaterial into biological) examination of the phase state of sorbent matter and investigating the effect of microwave heating on the kinetics of physicochemical processes and chemical reactions.

THE MOST RELEVANT PUBLICATIONS

Monographs, Book Chapters, Review Articles

1. B. Adnađević, **J. Jovanović**: HYDROGELS – synthesis, structure and properties (original HIDROGELOVI – sinteza, struktura i svojstava), Monograph, Eds, Faculty of Physical chemistry, Belgrade, 253 pages (2014).
2. **J. Jovanovic**, B. Adnadjevic, M. Gigov, The effects of external physical fields on the isothermal kinetics of fullerol formation *Advances in Chemistry Research*, Chapter 4, 46, 129-156, Science publisher, New York, ed. James C. Taylor, 2018.

3. Borivoj Adnadjevic and **Jelena Jovanovic** „The Effect of Microwave Heating on the Isothermal Kinetics of Chemicals Reaction and Physicochemical Processes, Chapter In Advances in Induction and Microwave Heating, INTECH (2011). (www.intechweb.org)
4. Borivoj Adnadjevic, Miroslava Nikolic, **Jelena Jovanovic**, Effects of adsorbents structure on the degree of reduction of nicotine , tar and CO in tobacco smoke, Chapter 10. *in* Nicotine Addiction: Prevention, Health Effects and Treatment Options, Nova Science Publishers, (2012) pp. 228-246 ; Inc. 2012 ISBN: 978-1-62081-344-7.
5. Borivoj Adnadjevic, Natasa Lazarevic, **Jelena Jovanovic**, Kinetics of nicotine binding and release from water solution onto poly(acrylic -co-methacrylic acid) xerogel/hydrogel, *in* Nicotine Addiction: Prevention, Health Effects and Treatment Options, Nova Science Chapter 11. Publishers, (2012) p. 247-268; Inc. 2012 ISBN: 978-1-62081-344-7.
6. Borivoj Adnadjević and **Jelena Jovanović**, “Hydrogel Synthesis Directed toward Tissue Engineering. Impact of Reaction Condition on Structural Parameters and Macroscopic Properties of Xerogels” **Review**, Special issue: Polymeric Biomaterials for Tissue Engineering 2011 **In**: Journal of International Polymer Science.

Publications in International Journals:

1. **Jelena D. Jovanovic** and Borivoj K. Adnadjevic Kinetics of the Release of Nicotinamide Absorbed on Partially Neutralized Poly(acrylic-co-methacrylic acid) Xerogel under the Conditions of Simultaneous Microwave Heating and Cooling, *Gels* (2021), **7**, 193. <https://doi.org/10.3390/gels7040193>
2. Rejane A. Batista , Paula J. P. Espitia, Daviane M. C. Vergne, António A. Vicente , Paula A. C. Pereira, Miguel A. Cerqueira, José A. Teixeira, **Jelena Jovanovic**, Patricia Severino , Eliana B. Souto , and Juliana C. Cardoso, Development and Evaluation of Superabsorbent Hydrogels Based on Natural Polymers, *Polymers* **12**, 2173 (2020); doi:10.3390/polym12102173.
3. B. Stanković, **J. Jovanović**, B. Adnađević, Application of the Suzuki-Fraser function in modelling the non-isothermal dehydroxylation kinetics of fullerol, *Reaction Kinetics, Mechanisms and Catalysis*, **123** 421-438 (2018).
4. B.Adnadjevic, B.Koturevic, **J.Jovanovic**, Comparative kinetic analysis of isothermal extraction of caffeine from guarana seed under conventional and microwave heating. *Chemical Engineering Research and Design*, **118**, 61-70 (2017).
5. B.Adnadjević, M.Gigov, **J. Jovanović**, Comparative analyses on isothermal kinetics of water evaporation and PAAG hydrogel dehydration under the microwave heating conditions. *Chemical Engineering Research and Design*, **122**, 113-120 (2017).
6. B.Adnadjevic, B.Koturevic, **J.Jovanovic**, Comparative kinetic analysis of isothermal extraction of caffeine from guarana seed under conventional and microwave heating. *Chemical Engineering Research and Design*, **118**, 61-70 (2017).
7. B.Stankovic, **J. Jovanovic**, S.Ostojic, B.Adnadjevic, Kinetic analysis of non-isothermal dehydration of poly (acrylic acid)-g-gelatin hydrogel using distributed activation energy model. *Journal of Thermal Analysis and Calorimetry*, **129** (1), 541-551 (2017).
8. **J. Jovanović** B. Stanković, B. Adnađević: Kinetics of isothermal dehydration of equilibrium swollen PAAG hydrogel under the microwave heating conditions. *Journal of Thermal Analysis and Calorimetry*, **127**(1), 655-662 (2017).

9. B.Koturevic, B.Adnadjevic, **J.Jovanovic**, Isothermal green microwave-assisted extraction of caffeine from guarana: a kinetic study. *Green Processing and Synthesis*, **6(6)**, 555-563 (2017).
10. **J. Jovanović**, B. Potkonjak, T. Adnađević, B. Adnađević: The effects of microwave heating on the kinetics of isothermal dehydration of equilibrium swollen poly(acrylic-co-methacrylic acid) hydrogel. *Polymer Engineering and Science*, **56(1)**, 87-96 (2016).
11. S Salvestrini, **J Jovanović**, B Adnadjević, Comparison of adsorbent materials for herbicide diuron removal from water, *Desalination and Water Treatment*, 1-10 (2016).
12. P. Spasojević, **J. Jovanović**, B. Adnađević: Unique effects of microwave heating on polymerization kinetics of poly (methyl methacrylate) composites. *Materials Chemistry and Physics*, **141 (2-3)**, 882-890 (2013).
13. B. Adnađević, J. Čolić, **J. Jovanović**: The effects of reaction conditions on the electrical conductivity of PAAG hydrogels. *Reactive & Functional Polymers* **73 (1)**, 1-10 (2013).
14. B. Adnadjevic, **J. Jovanovic**, Kinetics of Isothermal Ethanol Adsorption onto Carbon Molecular Sieve under Conventional and Microwave Heating, *Chemical Engineering and Technology*, **35(4)**, 1-9 (2012).
15. B. K. Adnadjevic, **J. D. Jovanovic**, A comparative kinetics study on the isothermal heterogeneous acid-catalyzed hydrolysis of sucrose under conventional and microwave heating, *Journal of Molecular Catalysis A: Chemical*, **356**, 70– 77(2012).
16. P. Spasojević, B. Adnađević, S. Veličković, **J. Jovanović**, „Influence of Microwave Heating on the Polymerization Kinetics and Application Properties of the PMMA Dental Materials“ *Journal of Applied Polymer Science* **119**, 3598–3606 (2011).
17. B. Adnadjevic, **J. Jovanovic**, N. Lazarevic, „Kinetics Study of Isothermal Nicotine Release from Poly(acrylic acid) Hydrogel“ *Journal of Applied Polymer Science*, **119**, 1805–1812 (2011).
18. B. Janković, B. Adnađević, **J.Jovanović** “The comparative kinetic study of non-isothermal and isothermal dehydration of swollen poly(acrylic acid) hydrogel using the Weibull probability function” *Chemical Engineering Research and Design* **89**, 373–383 (2011).
19. B. Adnađević, **J. Jovanović** A comparative kinetics study of isothermal drug release from poly(acrylic acid) and poly (acrylic-co-methacrylic acid) hydrogels“, *Colloides And Surface B: Biointerfaces*, **69**, 31-42 (2009)
20. B. Adnađević, M. Gigov, M. Sindić, **J. Jovanović**, „Comparative study on isothermal kinetics of fullerol formation under conventional and microwave heating“, *Chemical Engineering Journal*, **140**, 570-577 (2008).
21. **Jelena D. Jovanović** Milutin N.Govedarica, Petar R.Dvornic, Ivanka G.Popovic, The thermogravimetric analysis of some polysiloxanes, *Polymer Degradation and Stability*, **61(1)** 87-93 (1998).

Patents

1. Lj. Nikolić, V. Nikolić, B. Adnađević, **J. Jovanović**, I. Ristić: Microwave synthesis of polylactides, No. 2007/0324, 2007
2. Petar R.Dvornic, Milutin N.Govedarica,, **Jelena D. Jovanović**, Synthesis of oligopolisiloxanes, 1992.

