Name and Surname

Borivoj Adnadjevic

Academic or scientific position
Full professor

Affiliation
Faculty of Physical Chemistry, University of Belgrade, Studentski trg 12-16, 11158 Belgrade 118, Republic of Serbia

EDUCATION

1975 - B.Sc. in Physical Chemistry - Faculty of Sciences, University of Belgrade, SFRJ,
1978 - M.Sc. in Physical Chemistry - Faculty of Sciences,, University of Belgrade, SFRJ
1993 - Ph.D. Physical Chemistry - Faculty of Physical Chemistry, University of Belgrade, Yugoslavia
1987-1989 Upgrading: Institute of Catalysis of the Academy of Sciences of the USSR, department in Novosibirsk, Institute for Organic Synthesis "Zelinski", Lomonosov, Moscow..

PROFESSIONAL CAREER

1975-1978 A scholarship of the Republican Community for the Science of Serbia
1978-1982 Trainee Assistant at the Department of Chemical and Physical Chemistry, Physical Chemistry Group, PMF, Belgrade
1982-1994 Assistant at the Faculty of Physical Chemistry, Belgrade
1994-2004 Assistant Professor at the Faculty of Physical Chemistry, Belgrade
2004-2010 Associate Professor at the Faculty of Physical Chemistry, Belgrade
2010- to now Full Professor at the Faculty of Physical Chemistry, Belgrade

A summary of professional careers

The entire academic and scientific career of prof. B. Adnadjevic is committed to the Faculty of Physical Chemistry. At the Faculty of Physical Chemistry he organized classes on the following subjects: Physical Chemistry of Solid State, Colloids, Physical Chemistry of Colloids and Boundary Surfaces, Synthesis, Structure and Properties of Crystalline and Amorphous Materials, Forensic Physicochemical Analysis, Forensic Physical Chemistry.

Scientific-research work of B. Adnadjević is extensive and covers several areas: synthesis of new materials (different types of zeolites and zeolite catalysts, porous glass, precipitated SiO_2, carbon molecular sieves, harbor-like port, graphene, fulerol, TiO_2, nanostructured $CaCO_3$, choline chloride, various types of hydrogels, composite materials), examination of the isothermal and non-isothermal kinetics of the physicochemical processes (dehydration, adsorption and desorption, swelling, release of drugs, precipitation, crystallization, catalysis and enzymatic catalysis), development of new physicochemical processes and (catalytic conversion of biological material into biofuels, pervaporization, cavitation esterification and transesterification, hydrothermal conversion of biomaterial into biological or synthetic coke, catalytic conversion of CO_2 into hydrocarbons) examination of the phase state of sorbent matter and testing of the effect of microwave heating on the kinetics of physicochemical processes and chemical reactions. B. Adnadjević is the author of the monograph "Hydrogels - Synthesis, Structure and Properties" and Practicum "Practicum of physical chemistry of solid state", 9 chapters in books and monographs, 109 papers in interdisciplinary journals of categories M21,

M22 and M23, 20 papers in national journals, 134 presentationns exhibited at international and 129 at national conferences and 9 meetings. The total number of citations (without autocity) is 1028. He has reviewed 3 books and more than 100 papers in 15 international and domestic journals.

He participated in 12 national projects, of which he was the leader of 8 projects and 2 international projects from one of each was the leader. He is the author of 10 technologies based on which industrial production plants were built: water glass, zeolite type, granular zeolite, precipitated SiO_2, choline chloride.

Mother tongue B. Adnadjevic is Serbian, speaks Russian and English. He is a member of the physicochemicals of Serbia and the Serbian-Chemical Society.

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 (2010-2016).
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).
3. 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).
4. Physical chemistry of boundary phases. Physical chemistry of solid state, processes and phenomens at boundary phases. IOFH, 02.E.25 (1992-1996-2000).

MANAGEMENT OF NATIONAL PROJECT

1. Catalytic conversion of the products of alcoholic fermentation from biological materials into high-octane motor fuel. Federal Ministry of Science, Technology and Development. IOFH, OSI - 170 / 94 – 2 (1994-1997).
2. Production and application of ethyl alcohol as a fuel TD-7084 B. The Ministry of Science and Environment (2005-2007).
3. Hydrothermal conversion of vacuum residue, visbreaking residue and decantation oil in coke and hydrogen-rich gas. IP-8103, The Ministry of Science and Environment (2005-2007).
4. Development of a new device for hydrodynamic cavitation purification of waste water from organic pollutants. Ministry of Education, Science and Technological Development of Republic of Serbia, Project No. 2V68DC (2014-2015).
5. Technology improvements in the field of oil and gas. Subproject PP - 3 (Technology improvements of oil processing), Ministry of Science and Technology of Serbia, IOFH, S.2.09.25.00055. (1998-2000).
6. Preparation of p-xylene by catalytic alkylation of toluene with methanol, Ministry of Science and Technology of Serbia, IOFH, I.3.143. (1996-1997).
7. Preparation of highly-aromatized hexane aimed to extract oil from oilseeds. Ministry of Science and Technology of Serbia, IOFH, P.3.0032. (1995-1996).
8. Filtering and stabilizing materials for the food industry. Ministry of Science and Technology of Serbia, IOFH, I.3.0746. (1995-1996).

PARTICIPATION IN INTERNATIONAL PROJECT

1. European Cooperation in Science and Technology, COST Action CM1304, Emergence and Evolution of Complex Chemical Systems, (2013-2017)

MANAGEMENT OF INTERNATIONAL PROJECT

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).

MEMBERSHIP IN THE PROGRAM COMMITTEES OF CONFERENCES

1. 12th International Conference on fundamental and applied aspects of Physical chemistry, Beograd, Serbia (2014).
2. 11th International Conference on fundamental and applied aspects of Physical chemistry, Beograd, Serbia (2012).
3. 10th International Conference on fundamental and applied aspects of Physical chemistry, Beograd, Serbia (2010).
4. 9th International Conference on fundamental and applied aspects of Physical chemistry, Beograd, Serbia (2008).
5. 8th International Conference on fundamental and applied aspects of Physical chemistry, Beograd, Serbia (2006).
6. 7th International Conference on fundamental and applied aspects of Physical chemistry, Beograd, Serbia (2004).
7. CEEC-TAC3 3rd Central and Eastern European Conference on Thermal Analysis and Calorimetry (2015) , 25-28 August 2015 – Ljubljana, Slovenia,
8. CEEC-TAC2 2rd Central and Eastern European Conference on Thermal Analysis and Calorimetry (2013) , 27-30 August 2013, Vilnius, Lithuania

REWIEVER OF JOURNAL PAPERS

Colloids and Surfaces A: Physicochemical and Engineering Aspects
Chemical Engineering & Technology
Polymer Engineering & Science
Journal of Applied Polymer Science
Journal of Materials Chemistry and Physics
Chemical Engineering Journal
Journal of the Serbian Chemical Society
Journal of Thermal Analysis and Calorimetry
Thermochimica Acta
Journal of Materials Science& Technology
Brazilian Journal of Chemical Engineering
Chemical Industry
Journal of Alloys and Compounds
Industrial and Engineering Chemistry Research
Energy and Fuels

THE TEN REPRESENTATIVE REFERENCES

1. 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 & Design 122, 113-120 (2017).
2. J Jovanovic, B Stankovic, B Adnadjevic, Kinetics of isothermal dehydration of equilibrium swollen PAAG hydrogel under the microwave heating conditions, J Therm Anal Calorim, 127 (1) 655-662 (2017).
3. Jelena Jovanovic, Branislav Stankovic, Borivoj Adnadjevic**:** 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).

4. B. Potkonjak, J. Jovanović, B. Stanković, S. Ostojić, **B. Adnađević**: Comparative analyses on isothermal kinetics of water evaporation and hydrogel dehydration by a novel nucleation kinetics model. Chemical Engineering Research and Design 100, 323–330 (2015)
5. 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)
6. Z. Z. Baroš, **B. K. Adnađević**: Weibull cumulative distribution for modeling the isothermal kinetics of the titanium-oxo-alkoxy cluster growth. Industrial & engineering chemistry, 52 (5), 1836-1844 (2013)
7. **Borivoj K. Adnadjevic**, Jelena D. Jovanovic: Comparative kinetics study of isothermal ethanol adsorption onto carbon molecular sieve under the conventional and microwave heating. Chemical Engineering and Technology, 35 (4), 1-9 (2012)
8. **Borivoj Adnadjevic**, 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 of Mineral and Organic Materials, ed. Stanislaw Grundas, INTECHWEB.ORG, pp. 391- 422 (2011)
9. **B. Adnađević**, M. Gigov, M. Sinđić, J. Jovanović: Comparative study on isothermal kinetics of fullerol formation under conventional and microwave heating. Chemical engineering journal, 140, 570-577 (2008).
10. **B. Adnađević**, J. Janković, Lj. Kolar-Anić, D. M. Minić: Normalized Weibull distribution function for modelling the kinetics of non-isothermal dehydration of equilibrium swollen poly(acrylic acid) hydrogel. Chemical engineering journal, 130 (1), 11-17 (2007).

BOOKS AND CHAPTERS

1. B. Adnađević, J. Jovanović: Hydrogels – synthesis, structures and properties, Monography and additional scholar book, Faculty of Physical Chemistry, Belgrade, p 253, (2014) ISBN 978-86-82139-46-1
2. B. Adnađević, M. Nikolić, J. Jovanović: Effects of adsorbents structure on the degree of reduction of nicotine, tar and CO in tobacco smoke. Chapter in: Nicotine Addiction: Prevention, Health Effects and Treatment Options, Nova Science Publishers, Inc., pp. 228-246 (2012).
3. B. Adnađević, N. Lazarević, J. Jovanović: Kinetics of nicotine binding and release from water solution onto poly (acrylic-co-methacrylic acid) xerogel/hydrogel. Chapter in: Nicotine Addiction: Prevention, Health Effects and Treatment Options, Nova Science Publishers, Inc., pp. 247-268 (2012).
4. B. Adnađević, J. Jovanović: The effect of microwave heating on the isothermal kinetics of chemicals reaction and physicochemical processes. Chapter in: Advances in Induction and Microwave Heating of Mineral and Organic Materials, INTECHWEB.ORG, pp. 391- 422 (2011).
5. B. Adnađević, J.Jovanović: Hydrogel synthesis directed toward tissue engineering: Impact of reaction condition on structural parameters and macroscopic properties of xerogels. Review Article, Special issue: Polymeric Biomaterials for Tissue Engineering In*:* International Journal of Polymer Science Volume 2011, Article ID 343062, doi: 10.1155/2011/343062, (2011)
6. B. Adnađević: Physical Chemistry of solid state, hand book, Faculty of Physical Chemistry, Belgrade, p 143, (2009) ISBN 978-86-82139-13-3
7. J. Jovanović, B. Adnađević, E. Suljovrujić, N. Ignjatović, D. Uskoković: Influence of the HAP ration on the thermodynamic and kinetic parameters of PDMS/HAP composite cross-linking. Chapter in: Calcium phospate ceramics – bioresorbable polymer composition biomaterials from synthesis to application, Institute of Technical Science of the Serbian Academy of Science and Arts, Belgrade, pp. 211-226 (2007).
8. B. Adnađević: Catalytic conversion of ethanol and waste biological materials into engine oils and basic organic chemicals, Chapter in: Proccedings dedicated to professor D. Vučelić, IOFH, Belgrade,pp. 317-335, (2003).
9. B. Adnađević, A. Popović, J. Jovanović: Summary of achieved results in application of new catalytic processes in enviromental protection. Chapter in: New chalenges in catalysis III, Serbian Academy of Science and Art, Branch ili Novi Sad, N. Sad, pp. 119-135 (2002).
10. B. Adnađević: Mechanism of deactivation and the regenaration of the catalyst for the catalytical dehydrogetion of normal (C_9-C_{14}) paraffins. Chapter in: New chalenges in catalysis II, Serbian Academy of Science and Art, Branch ili Novi Sad, N. Sad, pp. 169-180 (1999).
11. B. Adnađević: Review of basic achivements in the development of zeolite catalysts and novel catalytic processes. Chapter in: New chalenges in catalysis, Serbian Academy of Science and Art, Branch ili Novi Sad, N. Sad, pp. 71-79 (1997).

Patents

1. Lj. Nikolić, V. Nikolić, **B. Adnađević**, J. Jovanović, I. Ristić: Microwave synthesis of polylactides, No. 2007/0324, 2007
2. **B. Adnađević**: Production of water glass based on opalised tuff as a raw material, Patent No. 900801, FYR Macedonia, 2003
3. **B. Adnađević**: Procedure for purification of opalised tuff from clay substancesi- high purity SiO_2 production, Patent No. 900802, FYR Macedonia, 2003
4. **B. Adnađević**: Decoloration of water glass obtained by application opalised tuff, Patent No. 900842, FYR Macedonia, 2003
5. **B. Adnađević**: Procedure for zeolit type NaA preparation by application opalised tuff, Patent No. 900843, FYR Macedonia, 2003
6. **B. Adnađević**: Tehnologycal-ecology cycle procedure for NaA type zeolite preparation by using zeosomit, Patent No. 900858, FYR Macedonia, 2003
7. B. Šolaja, **B. Adnađević**, D. Milić: Catalytic procedure for nicotine acid hydrazide preparation, Patent No. P - 326/96, SR Yougoslavia, 1996
8. J. Hranisavljević, S. Gajinov, **B. Adnađević**, D. Vučelić: Washing agents combined with alumosilicates – ethers of polycarboxylic acids, P-1993/84, SFRJ, 1984
9. **B. Adnađević**, D. Vučelić, V. Dondur, B. Miočinović, D. Karaulić, S. Lampa: Procedure for preparation of NaA type zeolite for detergent as final product in plants for alumina production, Patent No. P-1438/81, SFRJ, 1981
10. **B. Adnađević**, D. Vučelić, V. Dondur, B. Miočinović, Z. Filipović: Procedure for preparation of NaA type zeolite for detergents, Patent No. P-1437/81, SFRJ, 1981

Realized Technologies

1. Factory for water glass production capacity 600000 t / year, TG-Birač, BIH.
2. Factory for production of detergent zeolite capacity of 2500000 t / year, TG-Birač, BIH.
3. Factory for the production of granulated zeolite with a capacity of 20000 t / year, TG-Birač, BIH.
4. Factory for production of precipitated SiO2 capacity 20000 t / year, TG-Birač, BIH.
5. Factory for production of water glass with capacity of 30000 t / year, BSB Probištip, FYR Macedonia.
6. Factory for the production of detergent zeolite with a capacity of 20000 t / year, BSB Probištip, FYR Macedonia.
7. Factory for production of silicate binders with capacity 1000 t / year, BSB Probištip, FYR Macedonia.
8. Water glass production plant with a capacity of 20000 t / year, Magmasil, R. Serbia
9. Factory for the production of granular choline chloride with a capacity of 2000 t / year, Magmasil, R. Serbia.
10. Factory for the processing of used oils in biodiesel with a capacity of 5000 t / year, Kovako, R. Serbia.

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