

CURRICULUM VITAE

Dr. Viktoriya Konovalova, Ms.Eng., Ph.D



PERSONAL DETAILS

SURNAME: Konovalova
FIRST NAME: Viktoriia
NATIONALITY: Ukrainian
DATE OF BIRTH: 20 / 04 / 1975
OFFICIAL ADDRESS: National University "Kyiv-Mohyla Academy"
2 Skovoroda Street
Kyiv, 04070
Ukraine
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UNIVERSITY EDUCATION

1999-2001 National University "Kyiv-Mohyla Academy"
Kiev, Ukraine.
2001 Awarded the degree of *Ph.D.* in *Chemistry (Colloid Chemistry)*.
Thesis Title:
Membrane with immobilized cells and their properties
1992-1998 National Technical University "Kyiv Polytechnical Institute"
Kiev, Ukraine
1998 Awarded the degree of *Ms.Eng (Hons)* in *Chemical Engineering*
Five years course with research project.

RESEARCH INTERESTS

- **Membranology.**
Polymeric membrane and hydrogel preparation by dry/wet formation, chemical and physico-chemical modification; membrane calibration; characterisation of morphological and transport properties of semi-permeable membranes.
- **Membrane processes of separation**
Membrane biofouling, mass transfer phenomena in reverse osmosis, nano-, ultrafiltration, membrane distillation; pressure-driven membrane processes in the treatment of complex fluids; deep concentration of aqueous streams by membrane distillation; membrane fractionation.
- **Biological methods of wastewater treatment**

immobilised microorganism, destruction of organic pollutants, denitrification, sulphatereduction, metal reduction.

- **Membrane bioreactor**

Biocatalyst (whole cell and enzyme) immobilisation on polymer membranes as support; waste waters treatment in membrane bioreactor with biofunctional membranes; (bio)catalytic synthesis in membrane reactors, affinity membranes, membranes with antibacterial properties, biocompatible membranes.

TEACHING EXPERIENCE

Since Jan. 2006 Associate professor
Department of Chemistry
National University "Kyiv-Mohyla Academy"
Kiev, Ukraine. www.ukma.kiev.ua

Lectures:

2012 - Physical Chemistry (undergraduate program)
2009- The bases of water treatment technology (master program)
2007- Theoretical bases of membrane processes (master program)

Laboratory

2006-2008 Organic Chemistry (undergraduate program)
2008- Physical Chemistry (undergraduate program)

WORKING EXPERIENCE

Since Jan. 2003 Senior Researcher
Department of Chemistry
National University "Kyiv-Mohyla Academy"
Kiev, Ukraine. www.ukma.kiev.ua

The main research activities:

Development of membranes with different functional properties (affinity, biocompatible, bactericidal, pH-sensitive)

Enzyme immobilization on polymer membranes surface, investigation of enzymatic activities on membrane surface, chemical modification of membrane surface for attachment-detachment biomolecules, design enzyme membrane bioreactor

Study of semipermeable membranes with antibacterial action, development the method of bactericidal membranes formation on the base of cellulose and chitosan, research the antimicrobial properties of the natural and synthesized oligomers.

Development of solvent-resistant nanofiltration membranes

Jan 2001 – Jan 2003 Junior Researcher
Department of Chemistry
National University "Kyiv-Mohyla Academy"
Kiev, Ukraine.

The main research activities:

Study of biological process denitrification, chromate reduction, sulfatereduction, Mn-reduction in bacteria cultures

Immobilization bacteria whole cells on polymer membranes as support

Immobilization enzyme and bio macromolecules on polymer membranes

Design bioreactors for waste water treatment

Study of destruction organic pollutant on biofunctional membranes

Polymeric membrane and hydrogel preparation by dry/wet formation, chemical and physico-chemical modification; membrane calibration; characterisation of morphological and transport properties of semi-permeable membranes.

RECENT RESEARCH FUND

A Collaborative Grant from NATO (2002)

Development of Solvent-resistant Nanofiltration Membranes

Grant STCU (2003-2005), Development of semipermeable membranes with bacteriostatic action for water treatment systems

Grant of President of Ukraine (2006) Study of oxidize nitrogen compounds reduction in membrane bioreactor

LIST OF MAIN RESENT PUBLICATIONS

Journal Papers

S. Kolesnyk, **V.V. Konovalova**, A.F. Burban Alginate/ κ -carrageenan microspheres and their application for **protein** drugs controlled release / Chemistry & Chemical technology. – 2015 V.12 in press.

Konovalova, V. , Samchenko, Y. , Pobigai, G. , Burban, A. and Ulberg, Z. (2013) Thermo- and pH-Responsive Hydrogels Based on N-Isopropylacrylamide and Allylamine Copolymers. *Soft*, **2**, 19-26. doi: [10.4236/soft.2013.24005](https://doi.org/10.4236/soft.2013.24005).

I. Stadniy, **V. Konovalova**, Y. Samchenko, G. Pobigay, A. Burban and Z. Ulberg, "Development of Hydrogel Polyelectrolyte Membranes with Fixed Sulpho-Groups via Radical Copolymerization of Acrylic Monomers," *Materials Sciences and Applications*, Vol. 2 No. 4, 2011, pp. 270-275. doi: [10.4236/msa.2011.24035](https://doi.org/10.4236/msa.2011.24035)

V. Konovalova, R. Nigmatullin, G. Pobigay, Development of antimicrobial membranes via the surface tethering of chitosan. *Journal of Applied Polymer Science*, Volume 111, Issue 4, Date: 15 February 2009, Pages: 1697-1705

V. Konovalova, R. Nigmatullin, G. Dmytrenko, G. Pobigay, Spatial sequencing of microbial reduction of chromate and nitrate in membrane bioreactor. *Bioprocess and Biosystems Engineering* **Volume 31, Number 6 / October, 2008** P.647-653

R. Nigmatullin, F. Gao, **V. Konovalova** , [Polymer-layered silicate nanocomposites in the design of antimicrobial materials](#), *J. Material Science*, **Volume 43, Number 17 / September, 2008**, P. 5728-5733

G.M. Dmytrenko, **V.V. Konovalova**, T.V.Ereshko. Reduction of Cr(VI) by Bacteria collection strains of different physiological groups. H.J.Heipieper (ed), *Bioremediation of soils Contaminated with Aromatic Compounds*, pp. 125–13, .2007 Springer

G.M. Dmytrenko, **V.V. Konovalova**, T.V.Ereshko. The Successive Reduction of Cr(VI) and NO₃⁻ or Mn(IV) Ions Present in the Cultivation Medium of Denitrifying Bacteria. *Microbiology*, 2006, *Vol. 75, No. 2*, pp. 125–128.

V.V. Konovalova, G.N. Dmytrenko, R.R. Nigmatullin, M.T. Bryk, P.I. Gvozdyak. Chromium (VI) reduction in a membrane bioreactor with immobilized *Pseudomonas* cells. *Enzyme and Microbial Technology*. 33 (2003) 899–907

V. V Konovalova, M. T Bryk, R. R Nigmatullin, P. I Gvozdyak, O. F Udilova, Biocatalytic membranes for ultrafiltration treatment of wastewater containing dyes, *Bioprocess Eng.* 23 (2000) 651-656.

Patents

P.V. Vakuluk, **V.V.Konovalova**, M. Vortnman, A.F. Burban, N.S.Klimenko, M.T. Bryk, V.V. Shevchenko, Epoxyurethane guanidine oligomer as bactericidal substenses, Patent of Ukraine №200507710. МПК (2006) C07C279/02, 02.08.2005

P.V. Vakuluk, **V.V.Konovalova**, M. Vortnman, A.F. Burban, N.S.Klimenko, M.T. Bryk, V.V. Shevchenko Method of polymer membrane creating, Patent of Ukraine №20031212537. МПК 7 B01D71/82, 26.12.2003

G.N. Dmytrenko, **V.V. Konovalova**, O.A. Shum, Method of aerobe bacteria cultivation and method of waste water treatment, Patent of Ukraine №54028, МКБ 7 C02F/30, C12N1/20, 1/26, 1/38, 15.06.2004.

International Conferences

V. Konovalova, A. Burban, G. Poltavceva, P. Vakuliuk, Influence of Magnetic Field on Mass Transfer Coefficient during Ultrafiltration on Magnetically Active Membranes// Book of Abstract International Congress of Membranes (ICOM) 2014. –P.911

S.O. Kryklia, Yu.M. Samchenko, T.P. Poltoratska, **V.V. Konovalova**. pH-sensitive Hybrid Hydrogel Materials with Incorporated Nanoparticles// PROCEEDINGS OF THE INTERNATIONAL CONFERENCE NANOMATERIALS: APPLICATIONS AND PROPERTIESю -2014. -Vol. 3 No 2, 02NNSA14(3pp)
<http://nap.sumdu.edu.ua:8080/index.php/nap/nap2014/paper/view/1525/661>

V.Konovalova, K. Guzykevych, A. Burban, Comparison of α –amylase immobilization methods on polymer membranes by determining mass transfer coefficient// Catalysis in Membrane Reactors -2013. –P.195

V.V. Konovalova, G.A. Pobigaj, Yu.M. Samchenko, A.F. Burban, Z.R. Ulberg, Nanocomposite Membranes with pH- and Thermo-sensitive Function// Nanomaterials: Application and properties. -2013. –V.2.N1. –02FNC17(3pp)
електронний ресурс: <http://nap.sumdu.edu.ua/index.php/nap/nap2013/paper/view/1111/510>

K.Y. Guzykevych, **V.V. Konovalova**, A.F. Burban Effect of immobilized α amylase on concentration polarization decrease in ultrafiltration of starch solutions. Thesis of Euromembrane 2012 –P.2.090 <https://elsevier.conference-services.net/secureProgramme>

V. Konovalova, G. Pobigaj, A. Burban Cellulose membranes with pH and thermo-sensitive function// International Congress on Membrane and Membrane Technology ICOM 2011. 23-29 July, Amsterdam