
Curriculum Vitae
Andriy Voronov

Coatings and Polymeric Materials Department,
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Education

Lviv Polytechnic National University, Ukraine	Polymer Chemistry, Ph.D.	12/1994
Lviv Polytechnic National University, Ukraine	Chemical Engineering, MS/BS with Distinction Prize	06/1990

Professional Experience

Associate Professor, Coatings and Polymeric Materials Department, North Dakota State University , Fargo, ND	2013 -pres.
Assistant Professor, Coatings and Polymeric Materials Department, North Dakota State University , Fargo, ND	2007-2013
Staff Scientist, Institute of Particle Technology, University of Erlangen-Nuremberg , Erlangen, Germany	2003–2007
Lecturer, Lviv Polytechnic National University , Lviv, Ukraine	1999–2000
Research Fellow, Institute of Physical Chemistry , NAS, Lviv, Ukraine	1990–1996

Visiting Positions

Alexander von Humboldt Fellow, University of Bayreuth , Germany	2000-2003
Research Fellow, Department of Experimental Physics, University of Ulm , Germany	1998-1999
Research Fellow, Department of Colloids and Interfaces, Institute Charles Sadron, CNRS , France	1997-1998

Professional Awards

3M Non-tenured Faculty Award 2011
Long-State Fellowship awarded by Alexander von Humboldt Fellowship for the research at the University of Bayreuth, Germany, 2001.
Alexander von Humboldt Fellowship awarded by Alexander von Humboldt Foundation for the research at the University of Bayreuth, Germany, 2000.
Research Fellowship awarded by NATO for the research at Institute Charles

Sadron, CNRS, Strasbourg, France 1997.

Faculty Research Fellow Award awarded by Austrian Ministry of Education, 1995

Memberships in Professional Societies

American Chemical Society

American Association for the Advancement of Science

International Society for Biomedical Polymers and Polymeric Biomaterials

List of selected peer-reviewed publications (since 2006)

From total >90 peer-reviewed articles, >100 conference presentations, 5 book chapters, 7 patents

A.Popadyuk, S.Samanta, S.Alam, H.Kalita, B.J.Chisholm, Soy-based Polymeric Surfactants for Personal Care Applications. A Review, Household and Personal Care Today, **2015**, in press.

N.Popadyuk, A.Popadyuk, A.Kohut, A.Voronov, Thermoresponsive Latexes for Fragrance Encapsulation and Release, *International Journal of Cosmetic Science*, **2015**, in press.

A.Kohut, I.Hevus, S.Voronov, A.Voronov, Invertible Polymers and their Applications, Chapter 19 in *Industrial Applications for Intelligent Polymers and Coatings*, Ed. M. Hosseini, A.S.H.Makhlouf, Springer International Publishing, **2015**, in press.

I.Tarnavchyk, A.Popadyuk, N.Popadyuk, A.Voronov, Synthesis and Free Radical Copolymerization of Vinyl Monomer from Soybean Oil, *ACS Sustainable Chemistry & Engineering*, **2015**, 3(7), 1618 - 1622.

A.Samaratunga, O.Kudina, N.Nahar, A.Zakharchenko, S.Minko, A.Voronov, S.W.Pryor Modeling the effect of pH and temperature for cellulases immobilized on enzymogel nanoparticles *Applied Biochemistry and Biotechnology*, **2015**, 176(4), 1114 - 1130.

O.Kudina, K.L.Shogren, K.T. Gustafson, M.J.Yaszemski, M.J., A. Maran, A., Voronov, Invertible micellar polymer nanoassemblies target bone tumor cells but not normal osteoblast cells. *Future Science OA*, **2015**, 1, 1-9, <http://www.future-science.com/doi/pdf/10.4155/fso.15.14>.

A.Samaratunga, O.Kudina, N.Nahar, A.Zakharchenko, S.Minko, A.Voronov, S.W.Pryor Impact of enzyme loading on efficacy and recovery of cellulolytic enzymes immobilized on enzymogel nanoparticles, *Applied Biochemistry and Biotechnology*, **2015**, 175 (6), 2872-2882.

Z.Demchuk, O.Budishevskaya, A.Voronov, V Vostres, I.Tarnavchyk, M.Savka, O.Zholobko, S.Voronov, Synthesis of surface active cholesterol-containing copolymers based on poly(maleic anhydride-co-ethyltrioxy-ethylene methacrylate), *Polymer Journal*, **2015**, in press.

Varvarenko S., Samaryk V., Vlislo V., Ostapiv D., Nosova N., Tarnavchyk I., Figyrka N., Ferens M., Nahornyak M., Taras R., Yaremchuk I., Voronov A., Voronov S. Fluorescein-containing theranostic agents based on pseudo poly(aminoacid)s for monitoring of delivery and release medicines, *Polymer*

Journal, **2015**, in press.

I. Tarnavchyk, A. Voronov, V. Donchak, O. Budishevskaya, O. Kudina, O. Khomenko, K. Harhay, V. Samaryk, S. Voronov, Synthesis and self-assembling of amphiphilic oligoesters on the base of pyromellitic acid, *Chemistry and Chemical Technology*, **2015**, in press.

H.Kalita, S.Alam, D.Kalita, A.Chernykh, I.Tarnavchyk, J.Bahr, S.Samanta, A.Jayasooriyama, S.Fernando, S.Selvakumar, A.Popadyuk, D.S.Wickramaratne, M.Sib,A.Voronov, A.Bezbaruah, B.J. Chisholm, Synthesis and Characterization of Novel Soybean Oil-Based Polymers and Their Application in Coatings Cured by Autoxidation *ACS Symposium Series*, **2015**, vol. 1178, Chapter 16 in *Soy-Based Chemicals and Materials*, Ed. R.P.Brentin, 371–390.

A.Popadyuk, H. Kalita, B.J. Chisholm, A. Voronov, Evaluation of Soy-Based Surface Active Copolymers as Surfactant Ingredients in Model Shampoo Formulations, *International Journal of Cosmetic Science*, **2014**, 36(6), 537-545.

Popadyuk, A., Tarnavchyk, I., Popadyuk, N., Kohut, A., Samaryk, V., Voronov, S., Voronov, A. Reinforcing Latex Coatings with Reactive Latex Particles, *Progress in Organic Coatings* **2014**, 77(12B), 2123-2132.

Kudina, O., Kohut, A., Tarnavchyk, I., Hevus, I., Voronov, A. Solvent-Responsive Self-Assembly of Amphiphilic Invertible Polymers Determined with SANS. *Langmuir*, **2014**, 30(12), 3310-3318.

O.Zholobko, I.Tarnavchyk, A.Voronov, O.Budishevskaya, A.Kohut, S. Voronov Covalent Bond Formation in the Reaction of Glucosamine as Monomer Unit of Chitosan Macromolecules and Poly(ethylene glycol) Disuccinate at Elevated Temperature *Journal of Chitin and Chitosan Science*, **2014**, 2, 299-305.

Voronov, S., Kohut, A., Tarnavchyk, I., Voronov, A. Advances in Reactive Polymeric Surfactants for Interface Modification. *Current Opinion in Colloid and Interface Science*, **2014**, 19 (2), 95-121.

Kudina,O., Zakharchenko,A., Trotsenko,O., Tokarev,A., Ionov,L., Stoychev,G., Puretskiy,N. Pryor,S.W., Voronov, A., Minko, S. Highly Efficient Phase Boundary Biocatalysis with Enzymogel Nanoparticles, *Angew.Chem Int.Ed.* **2014**, 53, 483-487.

Kudina, O., Tarnavchyk, I., Khomenko, O., Budishevskaya, O., Voronov, S., Voronov, A. PEG and Cholesterol-Containing Pyromellitates : Synthesis and Self-Assembly, *Macromolecular Chemistry and Physics*, **2013**, 2761-2767.

Popadyuk, A., Tarnavchyk, I., Popadyuk, N., Kohut, A.,Samaryk, V., Voronov, S.,Voronov, A. A Novel Copolymer of N-[(tert-Butylperoxy)methyl]acrylamide and Maleic Anhydride for Use as a Reactive Surfactant in Emulsion Polymerization *Reactive and Functional Polymers*, **2013**, 73, 1290-1298.

Varvarenko, S., Tarnavchyk, I., Voronov, A., Fihurka, N., Dron, I., Nosova,N., Taras,R., Samaryk,V., Voronov, S. Synthesis and Colloidal Properties of Polyesters Based on Glutamic Acids and Glycols of Different Nature. *Chemistry and Chem.Technology*, **2013**, 7, 161-168.

Alam, S, Kalita, H., Kudina, O., Popadyuk, A., Chisholm, B.J., Voronov, A. Soy-Based Surface Active Copolymers as Safer Replacement for Low Molecular Weight Surfactants **2013** *ACS Sustainable Chemistry & Engineering*, 1(1), 19-22.

Hevus, I., Modgil, A., Daniels, J., Kohut, A., Sun, C., Stafslie, S., Voronov, A.

Invertible Micellar Polymer Assemblies for Delivery of Poorly Water-Soluble Drugs **2012** *Biomacromolecules*, 13, 2537-2545.

Popadyuk, A.; Solomko, N.; Voronov, A.; Budishevskaya, O.; Varvarenko, S.; Samaryk, V.; Voronov, S. Peroxidized Pickering Emulsions and Colloidosomes based on Them, *Reports of NAS of Ukraine* **2012**, 6, 111-117.

Hevus I.; Kohut A.; Voronov, A. Micellar Assemblies from Amphiphilic Polyurethanes for Size-Controlled Synthesis of Silver Nanoparticles Dispersible both in Polar and Nonpolar Media, *Journal of Nanoparticle Research* **2012**, 14(4), 820/1-820/11.

Samaryk, V.; Voronov, A.; Tarnavchyk, I.; Varvarenko, S.; Nosova, N.; Budishevskaya, O.; Kohut, A.; Voronov, S. Formation of coatings with tailored properties on polyperoxide-modified polymeric surfaces. *Progress in Organic Coatings* **2012**, 74(4), 687-696

Kugel, A.J.; Ebert, S.M.; Stafslie, S.J.; Hevus, I.; Kohut, A.; Voronov, A.; Chisholm B.J. Synthesis and Characterization of Novel Antimicrobial Polymers Containing Pendent Triclosan Moieties. *Reactive and Functional Polymers* **2012**, 72 (1), 69-76

Samaryk, V. Voronov, A., Tarnavchyk, I., Varvarenko, S., Nosova, N., Kohut, A., Voronov, S. Interface Radical Reactions of Functional Polyperoxides for fabrication of Three-Dimensional Polymeric Structures. In: Radical Polymerization: New Developments. Editors: I.O.Paulauskas, L.A. Urbonas. **2012** Nova Science Publishers Inc. ISBN:978-1-62100-406-6. 59pp.

Kohut, A.; Sieburg, L.; Vasylyev, S.; Kudina, O.; Hevus, I.; Stafslie, S.; Daniels, J.; Kislenco, V.; Voronov A. Amphiphilic Invertible Polymers (AIPs) Micellization and Self-Assembly in Aqueous Solutions in Amphiphiles: Molecular Assembly and Applications; **2012** Nagarajan, R.; ACS Symposium Series; American Chemical Society: Washington, DC, p.205-224

Hevus, I.; Kohut A.; Voronov, A. Interfacial micellar phase transfer using amphiphilic invertible polymers, *Polym Chem* **2011**, 2, 2767-2770

Kohut, A., Kudina, O., Dai, X., Schulz, D.L., Voronov, A. "Host-guest" interactions between non-micellized amphiphilic invertible polymer and insoluble cyclohexasilane in acetonitrile. *Langmuir* **2011**, 27, 10356-10359.

Varvarenko S. , Voronov A. , Samaryk V. , Tarnavchyk I. , Roiter Y. , Minko S., Nosova N. , Kohut A. , Voronov S. Polyolefin surface activation by grafting of functional polyperoxide. *React.Funct.Polym.* **2011**, 71 (2), 210-218

Kohut, A.; Dai, X. ; Pinnick, D.; Schulz, D. L.; Voronov, A. "Host-guest" interaction between cyclohexasilane and amphiphilic invertible macromolecules *Soft Matter*. **2011**, 7, 3717-3720.

Damm, C., Mallembakam, M.R., Voronov, A. Peukert, W. Production of filled hydrogels by mechanochemically induced polymerization *J.Appl.Polym.Sci.* **2011** 120 (2), 799-807.

Hevus, I.; Kohut, A.; Voronov, A. Amphiphilic Invertible Polyurethanes: Synthesis and Properties *Macromolecules* **2010**, 43 (18), 7488-7494.

Sieburg, L.; Kohut, A.; Kislenco, V.; Voronov, A. Amphiphilic invertible polymers for adsorbilization on hydrophilic and hydrophobized silica nanoparticles *J. Colloid Interface Sci.* **2010**, 351 (1), 116-121.

Varvarenko, S.; Voronov, A.; Samaryk, V.; Tarnavchyk, I.; Nosova, N.; Kohut, A.; Voronov, S. Covalent grafting of polyacrylamide-based hydrogels to a polypropylene surface activated with functional polyperoxide modification *React. Funct. Polym.* **2010**, *70* (9), 647–655.

Kudina, O. O.; Budishevs'ka, O. G.; Voronov, A. S.; Kogut, A. M.; Voronov, S. A. Amphiphilic comb-like copolymers of maleic anhydride as nanoreactors for the synthesis of silver nanoparticles *Reports of NAS of Ukraine* **2010** (7), 119–125.

Varvarenko, S.; Samaryk, V.; Nosova, N.; Puzko, N.; Taras, R.; Tarnavchyk, I.; Voronov, A.; Kohut, A.; Voronov, S. Prediction of Interfacial Interactions between Polymer Layers *Macromol. Symp.* **2010**, *298* (1), 72–78.

Kudina, O.; Budishevska, O.; Voronov, A.; Kohut, A.; Khomenko, O.; Voronov, S. Synthesis of New Amphiphilic Comb-Like Copolymers Based on Maleic Anhydride and α -Olefins *Macromol. Symp.* **2010**, *298* (1), 79–84.

Solomko, N.; Budishevska, O.; Voronov, A.; Kohut, A.; Popadyuk, A.; Voronov, S. Peroxide-Containing Chitosan Derivative for Hydrogel Synthesis *Macromol. Symp.* **2010**, *298* (1), 85–90.

Tarnavchyk, I.; Voronov, A.; Kohut, A.; Nosova, N.; Varvarenko, S.; Samaryk, V.; Voronov, S. Reactive Hydrogel Networks for the Fabrication of Metal-Polymer Nanocomposites *Macromolecular Rapid Communications* **2009**, *30* (18), 1564 – 1569.

Samaryk, V.; Voronov, A.; Tarnavchyk, I.; Kohut, A.; Nosova, N.; Varvarenko, S.; Voronov, S. A versatile approach to develop porous hydrogels with a regular pore distribution and investigation of their physicochemical properties. *Journal of Applied Polymer Science* **2009**, *114* (4), 2204 – 2212.

Budishevska, O.; Dronj, I.; Voronov, A.; Solomko, N.; Kohut, A.; Kudina, O.; Voronov, S. Amphiphilic polyperoxide based on an alternating copolymer of 1-octene and maleic anhydride for interface modification. *Reactive and Functional Polymers* **2009**, *69* (10), 785 – 791.

Shafranska, O.; Voronov, A.; Kohut, A.; Wu, X.-F. Akhatov, I. S. Polymer–metal complexes as a catalyst for the growth of carbon nanostructures. *Carbon* **2009**, *47* (13), 3137 - 3139.

Samaryk, V.; Tarnavchyk, I.; Voronov, A.; Varvarenko, S.; Nosova, N.; Kohut, A.; Voronov, S. A New Acrylamide-Based Peroxide Monomer: Synthesis and Copolymerization with Octyl Methacrylate. *Macromolecules* **2009**, *42* (17), 6495 – 6500.

Kohut, A.; Voronov, A. Hierarchical Micellar Structures from Amphiphilic Invertible Polyesters: ^1H NMR Spectroscopic Study *Langmuir* **2009**, *25* (8), 4356 – 4360.

Peukert W., Voronov A. Ed. by W.Sigmund, Product Engineering of Nanoscaled Materials. From “Particulate Systems in Nano- and Biotechnologies”, **2009**, 115-135.

Voronov, A.; Kohut, A.; Vasylyev, S.; Peukert, W. Mechanism of silver ion reduction in concentrated solutions amphiphilic invertible polyesters in nonpolar solvent at room temperature *Langmuir* **2008**, *24* (21), 12587 – 12594.

Tarnavchik, I.; Samarik, V.; Voronov, A.; Varvarenko, S.; Nosova, N.; Kohut, A.; Voronov, S. Formation of porous hydrogels with controlled

physicomechanical properties, *Reports of NAS of Ukraine* **2008**, 9, 130-135.

Voronov, A.; Vasylyev, S.; Kohut, A.; Peukert, W. Surface activity of new invertible amphiphilic polyesters based on poly(ethylene glycol) and aliphatic dicarboxylic acids *Journal of Colloid and Interface Science* **2008**, 323 (2), 379 – 385.

Reindl, A.; Voronov, A.; Gorle, P. K.; Rauscher, M.; Roosen, A.; Peukert, W. Dispersing and stabilizing silicon nanoparticles in a low-epsilon medium *Colloids and Surfaces A* **2008**, 320(1-3), 183-188.

Martinez Tomalino, L.; Voronov, A.; Kohut, A.; Peukert, W. Study of Amphiphilic Polyester Micelles by Hyper-Rayleigh Scattering: Invertibility and Phase Transfer *Journal of Physical Chemistry B* **2008**, 112 (20), 6338 – 6343.

Tarnavchik, I.; Samarik, V.; Voronov, A.; Varvarenko, S.; Nosova, N.; Kogut, A.; Voronov, S. Formation of hydrogels grafted on polymer surface for biomedical applications. *Reports of NAS of Ukraine* **2008**, 7, 146-150.

Kohut, A.; Voronov, A.; Samaryk, V.; Peukert, W. Amphiphilic Invertible Polyesters as Reducing and Stabilizing Agents in the Formation of Metal Nanoparticles *Macromol. Rapid Commun.* **2007**, 28, 1410 – 1414.

Kohut, A.; Voronov, A.; Peukert, W. An Effective Way to Stabilize Colloidal Particles Dispersed in Polar and Nonpolar Media *Langmuir* **2007**, 23 (2), 504 – 508.

Voronov, A.; Kohut, A.; Peukert, W. Synthesis of Amphiphilic Silver Nanoparticles in Nanoreactors from Invertible Polyester *Langmuir* **2007**, 23 (2), 360 – 363.

Voronov, A.; Kohut, A.; Synytska, A.; Peukert, W. Mechanochemical Modification of Silica with Poly(1-vinyl-2-pyrrolidone) by Grinding in a Stirred Media Mill *J. Appl. Pol. Sci.* **2007**, 104 (6), 3708 – 3714.

Voronov, A.; Kohut, A.; Peukert, W.; Voronov, S.; Gevus, O.; Tokarev, V. Invertible Architectures from Amphiphilic Polyesters *Langmuir* **2006**, 22 (5), 1946 – 1948.

Kohut, A.; Ranjan, S.; Voronov, A.; Peukert, W.; Tokarev, V.; Bednarska, O.; Gevus, O.; Voronov, S. Design of a New Invertible Polymer Coating on a Solid Surface and Its Effect on Dispersion Colloidal Stability *Langmuir* **2006**, 22 (15), 6498 – 6506.

Synergistic Activities

Organized Symposia

ICNFA'14 Meeting “Engineering at Biointerfaces”

ICNFA'13 Meeting, “Nanotechnology in Anticancer Research”

Fall 2012 ACS National Meeting, PMSE “Responsive Nanostructured Materials via Self-Assembly”

ICNFA'11 Meeting, “Responsive Nanostructured Materials via Self-Assembly”

Fall 2009 ACS National Meeting, PMSE “Smart Hybrid Micro- and Nanoparticles”

Associate Editor of Sustainable Chemistry 2015 (SustSci Publisher)

Member of Editorial Board of Coatings (MDPI) 2014.

Member of Editorial Board of the International Journal of Polymeric Materials and

Polymeric Biomaterials 2013

Associate Editor of IJTAN (International Journal on Theoretical and Applied Nanotechnology) 2013.

Member of Editorial Board of ISRN (International Scholarly Research Network) Polymer Science journal 2011

Director of Summer Undergraduate Research Experience, (SURE) program at Coatings and Polymeric Materials Department 2011-present

Reviewer of manuscripts for more than 25 professional journals

Proposal Reviewer for CRDF (US Civilian Research and Development Foundation)

Proposal Reviewer for NSF

2008 SBIR/STTR Phase I BC: Surfaces and Coatings Panel

2011 Interfacial Processes and Thermodynamics (Transport) Program Panel, CBET Division

2012 Energy for Sustainability Program Panel, CBET Division

NDSU Governor's School mentor 2008 – 2015

NSF/ND EPSCoR NATURE (Nurturing American Tribal Undergraduate Research and Education) Program mentor 2010 – 2011, 2013

Professional Honors and Highlighted Publications

Invited Speaker at 2nd conference of International Society for Biomedical Polymers and Polymeric Biomaterials, 2015

Invited Speaker at 1st conference of International Society for Biomedical Polymers and Polymeric Biomaterials, 2014

Invited Speaker at 1st International Symposium on Nanoparticles/Nanomaterials and Applications, 2014

Invited Speaker at Particles 2013: Particles in Composites and Related Advanced Materials conference, 2013

Invited Speaker at ACS Fall meetings, 2008, 2012, 2013

Invited Keynote Speaker at ICNFA'12 2012

Invited Speaker at 7th Coatings Science International meeting 2011

Invited review article in Health and Personal Care Today 2015

Invited review article in Current Opinion in Colloid and Interface Science 2014

Cover page article in Angewandte Chemie International Edition 2014

Highlighted article in RCS journal Soft Matter 2011

Featured article in Research Advances, Journal of Chemical Education (ACS) 2006

The most accessed article in ACS journal Langmuir for a four months in 2006

Advising of Graduate Students and Postdoctoral Fellows

PhD students: A.Kohut (graduated 2006), I.Hevus (graduated 2012), I.Tarnavchyk (graduated 2008), O.Kudina (graduated 2014), A.Popadyuk (graduated 2015), O.Zholobko (current student).

Postdoc (3): Dr.N.Nosova (2005-2006), Dr. A. Kohut (2007-2011), Dr. I.Tarnavchyk (2011 - pres.).