

Curriculum Vitae

PERSONAL INFORMATION

Family name, First name: **Yankovych Halyna**

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ORCID ID: **0000-0003-4332-5924**

• AREAS OF RESEARCH

(I) Main field: environmental chemistry, material science, sustainable chemistry

(II) Current research interest: composite materials, carbon chemistry, adsorption of organic and inorganic pollutants, biosorption, adsorption mechanism investigation, chemical pollution, photocatalysis

(III) Other fields: analytical chemistry, biology, quality management

• POSITION(S) AND RESEARCH EXPERIENCE

09/2022 – present Research Fellow,
Department of Physical and Physico-Chemical Method of Minerals Processing,
Institute of Geotechnics Slovak Academy of Sciences, Slovakia

08/2015 – 08/2018 Leading chemist, quality manager
Uzhhorod State Border Control and Toxicology Laboratory, Ukraine

• EDUCATION

09/2018 – 08/2022 PhD student
Department of Physical and Physico-Chemical Method of Minerals Processing,
Institute of Geotechnics Slovak Academy of Sciences, Slovakia

09/2015 – 08/2018 PhD student
Department of Analytical Chemistry, Faculty of Chemistry, Uzhhorod National
University, Ukraine

09/2014 – 06/2015 Master *in Chemistry*
Department of Analytical Chemistry, Faculty of Chemistry, Uzhhorod National
University, Ukraine

09/2014 – 06/2016 Master *in Biology*
Department of Genetics, Plant Physiology and Microbiology, Faculty of Biology,
Uzhhorod National University, Ukraine

09/2010 – 06/2014 Bachelor *in Chemistry*
Department of Analytical Chemistry, Faculty of Chemistry, Uzhhorod National
University, Ukraine

09/2010 – 06/2014 Bachelor *in Biology*
Department of Genetics, Plant Physiology and Microbiology, Faculty of Biology,
Uzhhorod National University, Ukraine

• FELLOWSHIPS AND AWARDS

04/2022 – 06/2022 research internship, Advanced Materials Laboratory-LMA, University of
Alicante, Spain

12/2021 – 01/2022 research internship, Scientific Production Enterprise Technologika, LLC,
Kyiv, Ukraine

05/2021 the best oral presentation at Ukrainian conference with international
participation "Chemistry, Physics and Technology of Surface", Kyiv, Ukraine

03/2020 – 05/2020 Ernst Mach Grant Slovakia-Austria, awarded by OeAD-GmbH, University of

Salzburg, Fachbereich Chemie und Physik der Materialien
 09/2019 II place poster award, Nanoscience and Nanotechnology in Security and Protection against CBRN Threats, Sozopol, Bulgaria
 09/2014 – 06/2015 scholarship of International Visegrad Fund for ten-month period, Pavol Jozef Šafárik University in Košice, Slovakia
 01/2012 – 12/2014 scholarship of Transcarpathian Regional State Administration, Uzhhorod, Ukraine

Honours M.Sc. Diploma, Uzhhorod National University, 2015.

Honours B.Sc. Diploma, Uzhhorod National University, 2014.

Gold medal for excellence in education, the Ministry of Education and Science, Ukraine, 2010.

• TEACHING ACTIVITIES

09/2015 – 08/2018 Teaching of analytical chemistry and instrumental methods of analysis (in English) within PhD study at the Department of Analytical Chemistry, Faculty of Chemistry, Uzhhorod National University, Ukraine

• ADDITIONAL SKILLS AND COURSES

Research skills: titration technique, gravimetric analysis, ion-selective electrode elaboration, potentiometry, thin-layer chromatography, UV-Vis and infrared spectroscopies, basis of dye synthesis, qualitative and quantitative analysis of pesticides, chemical analysis of water, soil, and plant products, sol-gel techniques, low-temperature gas sorption analysis, scanning electron microscopy, X-ray diffraction analysis, X-ray photoelectron and Raman spectroscopies

Trainings: “QuEChERS method in combination with GS-MS/MS, LC-MS/MS, GS-ToF-MS and LC-ToF-MS for pesticides determination”, Landesuntersuchungsanstalt für das Gesundheits- und Veterinärwesen Sachsen (LUA), Dresden, Germany, 2018

“Ensuring quality system requirements in analysis of residual amount of pesticides in food samples”, BIOR, Riga, Latvia, 2018

“Requirement of ISO/IEC 17025:2005”, Twinning project, Kyiv, Ukraine, 2018

“Current requirements of the European Union and other international organizations in the field of pesticide analysis”, Ukrainian Laboratory of Quality and Safety of Agricultural Production, Kyiv, Ukraine, 2017

“Preparation for accreditation and audit in laboratories ISO/IEC 17025/2006”, EuroLab, Kyiv, Ukraine

Language skills: Mother tongue – Ukrainian, English (B2/C1), German (A2/B1), Slovak (C1), Russian (C1)

Digital skills: MS Office, NovaWin (calculations for gas sorption analysis), Origin, ChemSketch

Other: driving licence B; I am sociable person. I am team player and like to spend time with other people, attend different lectures, trainings and gain new experience in my professional area as well as in everyday life. I am administrative, attentive to details, creative. I can plan my time effectively to achieve the highest productivity. I am organized and I can organize other people for work or other activities. I am punctual person. I like reading, dancing, swimming, listening music, climbing and sightseeing, dancing salsa and bachata, reading detective stories, especially, Sherlock Holmes, watching films, spending time with my family and friends.

• KEY PUBLICATIONS (specify citations (excluding self-citations) and name of database (e.g. Web of Science, Scopus, Google Scholar, field specific databases)

Yankovych, H., Melnyk, I., Václavíková, M. Understanding of mechanisms of organohalogen removal onto mesoporous granular activated carbon with acid-base properties. In Microporous and Mesoporous Materials, 2021, vol. 317, p. 110974 (**My impact = 0.75**).

Responses:

1. Almeida, A.D.S.V.D., Mastelaro, V.R., da Silva, M.G.C., Prediger, P., Vieira, M.G.A. Adsorption of 17 α -ethinylestradiol onto a novel nanocomposite based on graphene oxide, magnetic chitosan and organoclay (GO/mCS/OC): Kinetics, equilibrium, thermodynamics and selectivity studies (2022) *Journal of Water Process Engineering*, 47, art. no. 102729. **Scopus**
2. Jiang, X., Xiao, Y., Xiao, J., Zhang, W., Rongliang, Q. The effect of persistent free radicals in sludge derived biochar on p-chlorophenol removal (2022) *Chemosphere*, 297, art. no. 134218. **Scopus**
3. Kyshkarova, V., Marcin Behunova, D., Václavíková, M., Melnyk, I.V. Hybrid composite sorbents based on SiO₂/PLGA for Fe(III) ions removal (2022) *Applied Nanoscience*, 12 (4), pp. 1201-1212. **Scopus**
4. Sviridova, E.S., Voronyuk, I.V., Eliseeva, T.V., Selemenev, V.F., Mukhin, V.M. Comparison of the sorption of 4-hydroxybenzaldehyde by activated carbon of different grades under static conditions (2022) *Sorbtsionnye i Khromatograficheskie Protsessy*, 22 (1), pp. 50-57. **Scopus**
5. Larasati, A., Fowler, G.D., Graham, N.J.D. Insights into chemical regeneration of activated carbon for water treatment (2021) *Journal of Environmental Chemical Engineering*, 9 (4), art. no. 105555. **Scopus**

Yankovych, H., Novoseltseva, V., Kovalenko, O., Marcin Behunová, D., Kaňuchová, M., Václavíková, M., Melnyk, I. New perception of Zn(II) and Mn(II) removal mechanism on sustainable sunflower biochar from alkaline batteries contaminated water. In *Journal of Environmental Management*, 2021, vol. 292, no. 112757, p.11 (**My impact=0.45**).

Responses:

1. V. Valdez, I., F. Almeida, M., M. Dias, J. Direct recovery of Zn from wasted alkaline batteries through selective anode's separation (2022) *Journal of Environmental Management*, 321, art. no. 115979. **Scopus**
2. Wijeyawardana, P., Nanayakkara, N., Gunasekara, C., Karunarathna, A., Law, D., Pramanik, B.K. Removal of Cu, Pb and Zn from stormwater using an industrially manufactured sawdust and paddy husk derived biochar (2022) *Environmental Technology and Innovation*, 28, art. no. 102640. **Scopus**
3. Shen, Y., Chen, L. Catalytic pyrolysis of cellulose with biochar modified by Ni–Co–Mn cathode material recovered from spent lithium-ion battery (2022) *Chemosphere*, 305, art. no. 135430. **Scopus**
4. Li, A., Zhang, Y., Ge, W., Zhang, Y., Liu, L., Qiu, G. Removal of heavy metals from wastewaters with biochar pyrolyzed from MgAl-layered double hydroxide-coated rice husk: Mechanism and application (2022) *Bioresource Technology*, 347, art. no. 126425, . **Scopus**
5. Zhao, J., Ye, Z.-L., Pan, X., Cai, G., Wang, J. Screening the functions of modified rice straw biochar for adsorbing manganese from drinking water (2022) *RSC Advances*, 12 (24), pp. 15222-15230. **Scopus**
6. Iamsaard, K., Weng, C.-H., Yen, L.-T., Tzeng, J.-H., Poonpakdee, C., Lin, Y.-T. Adsorption of metal on pineapple leaf biochar: Key affecting factors, mechanism identification, and regeneration evaluation (2022) *Bioresource Technology*, 344, art. no. 126131. **Scopus**
7. He, T., Chen, M., Ding, C., Wu, Q., Zhang, M. Hypothermia *Pseudomonas taiwanensis* J488 exhibited strong tolerance capacity to high dosages of divalent metal ions during nitrogen removal process (2021) *Bioresource Technology*, 341, art. no. 125785. **Scopus**
8. Zhang, J., Li, G., Liu, J. Investigation on the adsorption characteristics of Pb(II) onto bone char (2021) *Desalination and Water Treatment*, 239, pp. 241-258. **Scopus**
9. Liu, J., Zhou, R., Yu, J., Li, G., Li X., Xiao, Ch., Hou, H., Chi, R., Feng, G. Simultaneous removal of lead, manganese, and copper released from the copper tailings by a novel magnetic modified biosorbent. *Journal of Environmental Management*, 322, 116157. **Scopus**
10. Gao, P., Huang, Y., Zhang, Y., Sun, Q., Ruan, S., Yin, W., Fa, H. (2021). Simultaneous Electrochemical Detection of Ascorbic Acid, Dopamine and Uric Acid Using the Composite Materials of Fe₃O₄ and Nitrogen Self-Doped Sunflower Plate-Derived Carbon. *Nano*, 16(11), 2150127. **Google Scholar**

Novoseltseva, V., **Yankovych, H.**, Kovalenko, O., Václavíková, M., Melnyk, I. (2020). Production of high-performance lead (II) ions adsorbents from pea peels waste as a sustainable resource. In Waste Management & Research, 2021, vol. 39, no. 4, p. 584-593 (**My impact = 0.20**).

Responses:

1. Mostafa, N.G., Yunnus, A.F., Elawwad, A. Adsorption of Pb(II) from Water onto ZnO, TiO₂, and Al₂O₃: Process Study, Adsorption Behaviour, and Thermodynamics (2022) Adsorption Science and Technology, 2022, art. no. 7582756. **Scopus**
2. Griesiute, D., Gaidukevic, J., Zarkov, A., Kareiva, A. Synthesis of β -Ca₂P₂O₇ as an adsorbent for the removal of heavy metals from water (2021) Sustainability, 13 (14), art. no. 7859. **Scopus**
3. Amar, M.B., Walha, K., Salvadó, V. Valorisation of Pine Cone as an Efficient Biosorbent for the Removal of Pb(II), Cd(II), Cu(II), and Cr(VI) (2021) Adsorption Science and Technology, 2021, art. no. 6678530. **Scopus**
4. Kyshkarova, V., Marcin Behunova, D., Václavíková, M., Melnyk, I.V. Hybrid composite sorbents based on SiO₂/PLGA for Fe(III) ions removal (2022) Applied Nanoscience, 12 (4), pp. 1201-1212. **Scopus**
5. Kovalenko, O., Novoseltseva, V., Vasylyv, O., Liapina, O., Beregova, O. The Kinetics Of The Processes Of Extracting The Cu(II) And Fe(III) Ions From Aqueous Solutions By The Biosorbents Based On Pea Processing Waste (2020) Eastern-European Journal of Enterprise Technologies, 5 (10-107), pp. 14-25. **Scopus**
6. Sessa, F., Veeyee, K. F., & Canu, P. (2021). Optimization of biochar quality and yield from tropical timber industry wastes. Waste Management, 131, 341-349. **Web of Science**
7. Flores, J. V. (2020). Removal of Lead and Zinc in Wastewater Applying Activated Carbon: A Review of Articles [Remoción de plomo y zinc en aguas residuales mediante la aplicación de carbón activado: revisión de artículos]. Journal of Energy & Environmental Sciences, 3(2), 19-21. **Google Scholar**
8. Fernandes, F. S. Uso de materiais lignocelulósicos para remoção de metais pesados. 2021. 61 f. Trabalho de Conclusão de Curso (Graduação em Química Industrial) - Universidade Federal de Uberlândia, Uberlândia, 2021. **Google Scholar**
9. Novoseltseva, V., Kovalenko, O., Yankovych, H., Václavíková, M., & Melnyk, I. V. (2021). Selectivity and resource of biosorbents in the treatment of natural and wastewater from heavy metal ions. **Google Scholar**

Yankovych, H., Novoseltseva, V., Kovalenko, O., Melnyk, I. V., Václavíková, M. (2020). Chapter 34. Determination of surface groups of activated carbons from different sources and their application for heavy metals treatment. In Nanoscience and Nanotechnology in Security and Protection against CBRN Threats ISBN 978-94-024-2018-0 (pp. 431-436). Springer, Dordrecht. (**My impact = 0.50**).

Responses:

1. Ghani, U., Hussain, S., Imtiaz, M., & Khan, S. A. (2020). Laterite clay-based geopolymer as a potential adsorbent for the heavy metals removal from aqueous solutions. Journal of Saudi Chemical Society, 24(11), 874-884. **Scopus**
2. Kovalenko, O., Novoseltseva, V., Vasylyv, O., Liapina, O., Beregova, O. The Kinetics Of The Processes Of Extracting The Cu(II) And Fe(III) Ions From Aqueous Solutions By The Biosorbents Based On Pea Processing Waste (2020) Eastern-European J. of Enter. Technologies, 5 (10-107), pp. 14-25. **Scopus**
3. Daoud, M., Benturki, O., Kecira, Z., Fontana, S., Rogaume, Y., Girods, P. The effect of steam on the physicochemical properties of activated carbons based on Ziziphus jujube stones for reactive dye removal (2022) Biomass Conversion and Biorefinery. **Scopus**

Fershal M., **Yankovych H.**, Studenyak Y., Bazel Y., Koplík R., Revenco D. (2019). Combination of sequential injection analysis with an integrated [BF₄]-potentiometric sensor for the kinetic determination of boron. Sensors and Actuators B: Chemical, 2019, 126778 (**My impact=0.16**).

Responses:

1. Wu, T., Xia, D., Xu, J., Ye, C., Zhang, D., Deng, D., Huang, G. (2021). Sequential injection-square wave voltammetric sensor for phosphate detection in freshwater using silanized multi-walled carbon nanotubes and gold nanoparticles. *Microchemical Journal*, 167, 106311. **Web of Science**

- **KEY SCIENTIFIC TALKS AND PRESENTATIONS, CONFERENCE CONTRIBUTIONS**

European researchers' night: every year since 2019. In 2021 had an online conversation about health - What can we learn from wastewater? (Rozhovor o zdraví - Čo sa môžeme dozvedieť z odpadových vôd?), 24.09.2021, Bratislava, SK. Link:

https://www.youtube.com/watch?v=Ye_SmG2DETI&ab_channel=Nocv%C3%BDskumn%C3%ADkov

Presentation as part of a research stay at Paris Lodron University of Salzburg, Department of Chemistry and Physics of Materials: "Composite materials based on TiO₂ and granulated activated carbon for elimination and photodegradation of adsorbable organic halogens", 25 May 2020.

Key conference presentations

1. **Yankovych, H.**, Melnyk, I., Václavíková, M. Photocatalytic removal of halogenated organic substances and industrial dyes by activated carbon composites. In International conference "Functional inorganic materials 2022", 06-08 October 2022, Vilnius, Lithuania. **Oral presentation**
2. **Yankovych, H.**, Elsässer, M., Hüsing, N., Václavíková, M. Composite materials based on TiO₂ and activated carbon for elimination and photodegradation of adsorbable organic halogens. In Chemistry, Physics and Technology of Surface: Book of abstracts, XXII International Conference for Students, PhD Students and Young Scientists Modern Chemistry Problems 26-27 May 2021, Kyiv, Ukraine. – Kyiv, Ukraine, 2021, p. 216. **Oral presentation**
3. Yankovych, H., Elsässer, M., Hüsing, N., Václavíková, M. Application of titania immobilized on granular activated carbon for adsorption/decomposition of organic halogens. In Nanotechnology and Nanomaterials: In Abstract book: International research and practice conference NANO 2021, 25-27 August 2021, Lviv, Ukraine. **Poster presentation**
4. **Yankovych H.**, Václavíková M. Elimination of p-halogenophenols from wastewater by granulated activated carbon. In NATO Advanced Study Institute on Nanoscience and Nanotechnology in Security and Protection Against CBRN Threats: Book of Abstracts, Sozopol, Bulgaria, 12 – 20.09.2019. – Sozopol, Bulgaria: The NATO Science for Peace and Security Programme, 12.09.2019, p. 79. **Oral presentation**