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Dr. Nataliia A. Pinchukova

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PERSONAL:

Born: January 6, 1976; Bryansk, Russian Federation

Citizenship Ukraine

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Affiliation State Scientific Institution "Institute for Single Crystals" of National Academy of Sciences of Ukraine (Nauky Ave. 60, Kharkiv, Ukraine, 61072)

Positions: Senior researcher, head of the Applied Chemistry Group

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Researcher ORCID 0000-0002-8359-2288

Unique Identifiers: Scopus: 24376829100

EDUCATION AND ACADEMIC STATUSES:

Specialist (M.Sc.) **Chemistry**, June 1997, Kharkiv State University
Thesis under Prof. Nickolay Mchedlov-Petrosyan: "Effect of the counter-ion nature on the acid-base equilibrium of water-soluble indicators in micellar solutions of cationic surfactants".

Candidate of Science **Technology of Organic Synthesis Products**, April 2014, Volodymyr Dahl East Ukrainian National University
(PhD) Thesis under Dr. Aleksandr Voloshko supervision: "Technology principles of cocarboxylase hydrochloride production with the use of microwave irradiation".

Senior researcher Chemistry, February, 22, 2023, SSI "Institute for Single Crystals" NASU

PROFESSIONAL CAREER:

August 1992 – **Student**, Kharkiv State University, Ukraine
July 1997

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November 1997 – December 1999	Engineer , Chemical Reagents Plant in Kharkiv
January 2000 – December 2002	Foremaster of the production unit for the manufacture of drug substances , Chemical Reagents Plant in Kharkiv
January 2003 – June 2007	Head of the Central Plant Laboratory , Chemical Reagents Plant in Kharkiv
July 2007 – October 2008	Advanced Engineer , Department of Chemistry of Heterocyclic Compounds, SSI "Institute for Single Crystals" NAS of Ukraine, Kharkiv
November 2008 – October 2011	Postgraduate student , SSI "Institute for Single Crystals" NAS of Ukraine, Kharkiv
November 2011- December 2016	Junior Researcher , Department of Chemistry of Heterocyclic Compounds, SSI "Institute for Single Crystals" NAS of Ukraine, Kharkiv
December 2016- Present time	Senior Researcher , Department of Organic and Bioorganic Chemistry, SSI "Institute for Single Crystals" NAS of Ukraine, Kharkiv

RESEARCH INTERESTS:

Organic processes research&development. Applied chemistry. Processes scale-up. Energy efficiency and process intensification. Supramolecular Chemistry.

EXPERIMENTAL EXPERIENCE:

Research and development of synthesis processes for new substances for pharmaceutical, biomedical, agrotechnical and veterinary applications, from process feasibility to scale-up. Development of microwave-assisted processes for chemical and pharmaceutical production (synthesis, drying, crystallization etc.). Process intensification through the use of non-classical activation methods. Mentoring students and PhD students.

PUBLICATIONS:

Total amount: **17** publications in Ukrainian and international scientific journals, **16** Ukrainian patents, **10** Conference proceedings.

Selected publications:

1. Miasnikova D.Yu., Pinchukova N.A., Vlasenko H.S., Zinchenko I.O., Zbruyev O.I., Evtushenko Ye.V., Gurina T.M., Prokopyuk O.S. C. V. A. The methodology for determination of 1-methylcyclopropene in gas-air mixtures after release from supramolecular complexes. // *Functional Materials*, 2023, Issue 30, № 1. C. 128–133.
2. Oleg A. Zhikol, Daria Yu. Miasnikova, Olga V. Vashchenko, Natalia A. Pinchukova, Oleksandr I. Zbruyev, Svitlana V. Shishkina, Alexander Kyrychenko, Valentyn A. Chebanov. Host-guest complexation of (pyridinyltriazolylthio) acetic acid with cucurbit[n]urils (n=6,7,8): Molecular calculations and thermogravimetric analysis // *Journal of Molecular Structure*, 2023, Volume 1294, Part 2, 136532.
3. Miasnikova D.Yu., Pinchukova N.A., Saraev V.E., Musatov V.I., Vlasenko A.S., Shlyapkina Yu.V., Zbruyev O.I., Chebanov V.A. Chemical modification and quantification of 1-methylcyclopropene in supramolecular complex with cucurbit[6]uril by high performance liquid chromatography // *Chromatographia*, **85**, 1009–1016 (2022).
4. Pinchukova N.A., Voloshko A.Y., Merko M.A., Bondarenko Ya.A., Chebanov V.A. Intensification of ion exchange desorption of thiamine diphosphate by low-powered ultrasound // *Ultrasonics Sonochemistry*, 2018, 41, 261-266.
5. Pinchukova N.A., Voloshko A.Yu., Baumer V.N., Shishkin O.V., Chebanov V.A. The use of microwave irradiation for zeolite regeneration in a continuous ethanol dewatering process // *Chemical Engineering and Processing*, 2015, 95, 151-158.

Conferences:

1. A Scale-up microwave synthesis of cocarboxylase / **N. A. Pinchukova**, V. A. Chebanov, S. M. Desenko, N. Yu. Frishman, N. Yu. Gorobets, I. V. Knyazyeva, K. S. Ostras, N. V. Pogorelova, O. V. Shishkin, S. V. Shishkina, D. S. Sofronov, V. V. Vashchenko, A. Yu. Voloshko // 2nd Symposium on Microwave Accelerated Synthesis. - 26-28 September 2007 : Abstracts. – Duesseldorf, 2007. - P. 52.
2. Design of New Scale-Up Microwave Equipment for Chemical Industry / **N. A. Pinchukova**, A. Yu. Voloshko, S. M. Desenko, V. A. Chebanov, O. V. Shishkin // Zing| Microwave and Flow Chemistry, 28-31 January 2009 : Abstracts. - Jolly Beach, Antigua, 2009. - P. 51.
3. Application Diversity of Microwaves for Industrial Technology / **Natalia A. Pinchukova**, Valentin A. Chebanov, Sergey M. Desenko, Vladimir P. Semynozhenko, Oleg V. Shishkin, Aleksander Yu. Voloshko // 8th European Congress of Chemical Engineering, 25-29 September 2011, Berlin, Germany.
4. Mechanisms of microwave-dielectric interactions in various physico-chemical processes / **N. Pinchukova**, V. Chebanov, O. Shishkin, A. Voloshko // VIIth International Chemistry Conference “Kyiv-Toulouse”, 2-7 June 2013 : Abstracts. – Kyiv, 2013. - P. 48.
5. INTENSIFICATION OF ION-EXCHANGE PROCESSES BY MEANS OF LOW-POWERED ULTRASOUND / Natalia A. Pinchukova, Alexander Yu.Voloshko, Valentin A. Chebanov Maria A. Merko / 9th International Conference in Chemistry Kyiv-Toulouse ICTK-9 (ICTK-9), June 5 - 9, 2017, Kyiv, Ukraine.
6. Daria Miasnikova, **Natalia Pinchukova**, Vyacheslav Saraev, Oleksandr Zbruyev, Valentyn Chebanov. Chemical modification and quantification of 1-methylcyclopropene in supramolecular complex with cucurbit[6]uril // XXIII International Symposium „Advances in the Chemistry of Heteroorganic Compounds”. Poland, 2022

Patents:

1. Pinchukova N.A. [et al.], Method for drying of cocarboxylase hydrochloride, Patent UA 82421, 2008.
2. Pinchukova N.A. [et al.], Method for preparation of cocarboxylase hydrochloride, Patent UA 85496, 2009.
3. Pinchukova N.A. [et al.], Device for drying of free-flowing dielectric materials, Patent UA 84354, 2008.
4. Pinchukova N.A. [et al.], Method for preparation of polyphosphoric acid, Patent UA 89132, 2009.

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5. Pinchukova N.A. [et al.], Device for continuous dewatering of organic solvents with zeolites.
Patent UA 107395, 2016.
6. Pinchukova N.A. [et al.], Method for preparation of cocarboxylase with the use of ultrasound,
Patent UA 146388, 2021.