CURRICULUM VITAE

Family name MCHEDLOV-PETROSSYAN

First name Nikolay (Mykola)

Present position Head of the Department of Physical Chemistry, V.N. Karazin Kharkiv National University, Professor

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Personal data

Title	Doctor of Science, Chemistry, Professor
Citizenship	Ukraine

Education

Period	Institution	Position	Main subjects studied
09/1971–07/1976	Kharkiv State University	Student	Chemistry, physics, mathematics, English
09/1976–09/1979	Kharkiv State University	Post graduate	Analytical chemistry, English

Qualification

Master degree (in Chemistry)	Kharkiv State University	1976
Candidate of Science (equal to Ph.D.)	Kharkiv State University	1980
Doctor of Science (Chemistry)	Institute for Chemistry of Non-aqueous Solutions, Ivanovo, Russian Acad. Sci.	1992
Doctor of Science (Chemistry)	Institute for General and Inorganic Chemistry, Kiev, Ukrainian Acad. Sci.	1994

Scientific awards

Honored Scientist of Ukraine	2005
Mykola Mykolayovych Beketov regional state administration scholarship (in chemistry)	2008
Honored Professor of V.N. Karazin Kharkiv Natl. University	2010

Award of the National Academy of Sciences of Ukraine "For preparation of scientific change" # 180	2010
Corresponding member of the National Academy of Science of Ukraine	2018
Commemorative award of the National Academy of Sciences of Ukraine in honor of the 100th anniversary of the National Academy of Sciences of Ukraine	2018
The State Prize of Ukraine in the Field of Science and Technique Laureate	2019
Medal "People's Honor" to Ukrainian scientists NAS of Ukraine 1918 - 2018	2019
Certificates of Outstanding Contribution in Reviewing from J. Mol. Liquids; Spectrochim. Acta A; Appl. Surf. Sci.; Colloids Surf. A; J. Chem. Thermodyn.	2017

7. Employment

Period	Position	Employer and place of work
10/2000 – till now	Head of the Department of Physical Chemistry	V. N. Karazin Kharkiv National University
09/1999 – till now	Professor of the Department of Physical Chemistry	V. N. Karazin Kharkiv National University
04/1992 – 09/1999	Associated Professor (Docent) of the Department of Physical Chemistry	V. N. Karazin Kharkiv National University
09/1980 – 04/1992	Researcher, Senior Researcher of the Research Institute of Chemistry	Kharkiv State University
10/2008 – 10/2008	Invited Lecturer	Philipps University of Marburg, Germany
10/2008 – 10/2008	Invited Lecturer	Technical University of Chemnitz, Germany
10/2008 – 10/2008	Invited Lecturer	University of Bremen, Germany
05/2023 – 09/2023	Researcher	Zhejiang ACME Information Technology co. LTD, China

8. Subjects read at the V. N. Karazin Kharkiv National University

- Colloid Chemistry
- Chemistry of Tensides and Dispersed Systems
- Selected Chapters of Solution Chemistry
- Physical Chemistry of Non-aqueous Solutions
- Organized systems, microreactors and nanochemistry

12 textbooks and manuals published, among them: **A textbook**: **Colloid Chemistry**, by N. O. Mchedlov-Petrossyan, V. I. Lebed, E. N. Glazkova, A. V. Lebed. Published by Kharkiv V. Karazin National University Press, Kharkiv, 500 p.; first edition: 2010; second edition: 2012 (Approved by the Ministry of Education and Science of Ukraine as textbook for chemical specialities of high education institutions).

9. Research interests

- Physical chemistry of lyophilic colloids; surfactant micelles and related systems;
- Adsorption from solutions;
- Lyophobic colloid systems: aggregative stability and coagulation;
- Nanocarbon structures in solution; fullerenes and nanodiamonds;
- Ionic equilibria in non-aqueous solvents;
- Ionic equilibria of xanthenes and triphenylmetine dyes in liquids.

Scopus: h index = 26.

https://www.scopus.com/authid/detail.uri?authorId=6602888346

https://orcid.org/000-0001-6853-8411

10. Editorial membership

Member of the Editorial Boards of:

Journal of Molecular Liquid (Elsevier), https://www.sciencedirect.com/journal/journal-of-molecular-liquids/about/editorial-board

Fullerenes, Nanotubes and Carbon Nanostructures (Taylor & Francis); https://www.tandfonline.com/action/journalInformation?show=editorialBoard&journalCode=lfnn20

Ukrainian Chemistry Journal (National Academy of Sciences of Ukraine) https://ucj.org.ua/index.php/journal/about/editorialTeam

Methods and Objects of Chemical Analysis (National Academy of Sciences of Ukraine); http://www.moca.net.ua/en/editors.html

Problems of Chemistry and Chemical Technology http://www.vhht.dp.ua/uk/editorial/

Kharkiv University Bull., Chem. Series http://chembull.univer.kharkov.ua/en/redcoll.php

Invited editor of special issues (of contributions to the International Conference: Modern Physical Chemistry for Advanced Materials 26-30 June 2007 • Kharkov, Ukraine**):**

Pure and Applied Chemistry, 2008 https://www.degruyter.com/journal/key/pac/80/7/html

Journal of Molecular Liquids, 2009 https://www.sciencedirect.com/journal/journal-of-molecular-liquids/vol/145/issue/3

Systematic reviewing of papers in international scientific journals (around 60 journals in total).

11. Research funding

During 1987-2020, was Head of 12 Scientific Projects financed by the Ministry of Education and Science of Ukraine.

In particular: 2016–2018: "Nanosystems and nanostructured materials: design, physico-chemical characterization, rationalizing of use in advanced technologies, medicine, analysis."

2019–2021: "Fundamentals of controlling physic-chemical and operational properties of nano- and microstructures in condensed systems: theoretical prediction and experimental studies."

2022 – till now: "Design and optimization of functional nanodispersed systems: Lyophilic aggregates, biocompatible sols, hybrid materials, photoelectrical converters.

12. Scientific supervision

Ph.D. studies conducted under supervision of Professor N. O. Mchedlov-Petrossyan

No	Ph.D. Students	Year	Title of the PhD Thesis
1	R. Salinas Mayorga (Nicaragua)	1990	Ionic equilibria of indicators of the triphenylmethane series in in the water–dimethyl sulfoxide system.
2	E. Arias Cordova (Peru)	1991	Extraction equilibria of triphenylmethane dyes and associates of their anions with crown-complexes of metals.
3	V.N.Kleshchevnikova	1994	Equilibria of xanthenes and sulfonephthalein dyes in aqueous solutions cationic surfactants.
4	V.I.Kukhtik	1996	Protolytic equilibria of some triphenylmethane dyes in nonaqueous solvents (co-advisor: Professor V. D. Bezuglyi).
5	O.N.Tychina	2000	The acid-base equilibria in the water – butanol-1 system.
6	V.K.Klochkov	2000	Properties of fullerene C_{60} aqueous solutions and its interaction with cationic dyes.
7	N.A.Vodolazkaya	2002	Protolytic equilibria in micellar solutions of surfactants.
8	A.V.Timiy	2002	Acid-base equilibria in ultramicroheterogeneous systems based on cationic surfactants.
9	Yu.V.Isaenko	2004	Acidity, solvation, and solvatochromism in microemulsions.

10	N.V.Salamanova	2006	Differentiation of acid properties and salt effects in direct abd reversed microemulsions.
11	E.Yu.Bryleva	2008	Acid-base equilibria in nanosized systems containing quaternary ammonium groups.
12	O.N.Bezkrovnaya	2008	The spectral and acid-base properties of the dyes in polyamic acid-based Langmuir–Blodgett films.
13	A.G.Yakubovskaya	2009	Protolytic equilibria and photophysical properties of functionalized xanthenes and some other dyes in organized solutions.
14	D.Yu.Filatov	2010	The dissociation constants of electrolytes and acidity scale in acetone in the presence of dimethylsulfoxide.
15	L.N.Bogdanova	2011	The interaction of dyes with macrocyclic reagents in water solutions.
16	T.A.Cheipesh	2015	Fluoresceins in solutions: protolytic equiliobria, optical properties and application for calixarenes investigation.
17	I.N.Palval	2015	Ionic association of picrates with cations of different nature in solvent with low and medium dielectric permittivity.
18	N.N.Kamneva	2016	The peculiarities of the protolytic equilibria on the surface of the surface of the cationic nanoparticles in hydrophilic and hydrophobic dispersions.
19	S.T.Goga	2017	Association and solvation in solutions of tetraalkylammonium and N-alkylpyridinium salts with hydrophobic anions.
20	Yu.T.M.Al-Shuuchi (Iraq)	2017	Nanosized aggregates of C_{60} in polar organic solvents: formation, properties and interaction with metal ions.
21	A.Yu.Kharchenko	2018	The protolytic equilibria of chromophores in the aqueous solutions of polyelectrolytes as compared with other colloidal systems.
22	O. G. Moskaeva	2023	Molecular structure and ionic equilibria of fluorogenic dyes in polar aprotic solvents (co-supervisor: F.-A. Miannay, Assistant Professor, HDR, University of Lille,, France).

Dr. Sci. Dissertations performed under scientific consulting of Professor N. O. Mchedlov-Petrossyan

No	Researcher	Year	Dissertation title
1	S. A. Shapovalov	2009	Heteroassociation of ions of dyes in aqueous solutions.
2	N. A. Vodolazkaya	2011	Acidity and solvation in organized solutions: differentiation impact of nanoparticles in lyophilic dispersions.

13. Publications: over 500 in total (including 82 articles devoted to the history of chemistry in V. N. Karazin Kharkiv National University**)**

Seven Monographs and Monograph Chapters, including:

1. N.O. Mchedlov-Petrossyan. Differentiation of the strength of organic acids in true and organized solutions. (In Russian, with 1530 references). Kharkiv University Press, 2004, 326 p.
2. N. A. Vodolazkaya, N. O. Mchedlov-Petrossyan. Acid-base equilibria of indicator dyes in organized solutions. (In Russian, with 666 references). Kharkiv University Press, 2014, 460 p.

Selected Papers (2013–2023)

1. N. O. Mchedlov-Petrossyan. Fullerenes in Liquid Media: An Unsettling Intrusion into the Solution Chemistry. **Chem. Rev.** 2013. V. 113. No. 7. P. 5149-5193. http://dx.doi.org/10.1021/cr3005026

2. T. A. Cheipesh, E. S. Zagorulko, N. O. Mchedlov-Petrossyan, R. V. Rodik, V. I. Kalchenko. The Difference between the Aggregates of a Short-Tailed and a Long-Tailed Cationic Calix[4]arene in Water as

Detected Using Fluorescein Dyes. **J. Mol. Liquids**. 2014. V. 193. P. 232-238. http://dx.doi.org/10.1016/j.molliq.2013.12.049

3. N. O. Mchedlov-Petrossyan, N. N. Kamneva, A. I. Marynin, A. P.Kryshtal, and E. Ōsawa. Colloidal Properties and Behaviors of 3nm Primary Particles of Detonation Nanodiamond in Aqueous Media. **Physical Chemistry Chemical Physics**. 2015. Vol. 17. P. 16186-16203. http://dx.doi.org/10.1039/C5CP01405K

4. N. O. Mchedlov-Petrossyan. The Davies equation of state of ionic surfactant adsorbed monolayer and related problems. **Colloids and Surfaces A: Physicochemical and Engineering Aspects**. 2018. Vol. 537. P. 325–333. https://doi.org/10.1016/j.colsurfa.2017.10.030

5. N. O. Mchedlov-Petrossyan, N. N. Kamneva, Y. T. M. Al-Shuuchi, A. I. Marynin, O. S. Zozulia, A. P. Kryshtal, V. K. Klochkov, S. V. Shekhovtsov. Towards better understanding of C_{60} organosols. **Physical Chemistry Chemical Physics**. 2016. Vol. 18. P. 2517-2526. http://dx.doi.org/10.1039/C5CP06806A

6. N. O. Mchedlov-Petrossyan, V. S. Farafonov, A. V. Lebed. Examining surfactant micelles via acid-base indicators: Revisiting the pioneering Hartley–Roe 1940 study by molecular dynamics modeling. **J. Mol. Liquids.** 2018. Vol. 264. P. 683–690. https://doi.org/10.1016/j.molliq.2018.05.076

7. N.O. Mchedlov-Petrossyan, T.A. Cheipesh, S.V. Shekhovtsov, E.V. Ushakova, A.D. Roshal, I.V. Omelchenko. Aminofluoresceins vs Fluorescein: Ascertained New Unusual Features of Tautomerism and Dissociation of Hydroxyxanthene Dyes in Solution. **J. Phys. Chem. A**, 2019. Vol. 123. No. 41. P. 8845–8859. https://doi.org/10.1021/acs.jpca.9b05810

8. A.N. Laguta, N.O. Mchedlov-Petrossyan, S.M. Kovalenko, T.O. Voloshina, V.I. Haidar, D.Yu. Filatov, P.V. Trostyanko, V.L. Karbivski, S.I. Bogatyrenko, Liyuan Xu, O.V. Prezhdo. Stability of Aqueous Suspensions of COOH-decorated Carbon Nanotubes to Organic Solvents, Esterification, and Decarboxylation. **J. Phys. Chem. Lett.** 2022. V. 13, 10126−10131 https://doi.org/10.1021/acs.jpclett.2c02902

9. N. O. Mchedlov-Petrossyan, T. A. Cheipesh, E. G. Moskaeva, S. V. Shekhovtsov, K. I. Ostrovskyi. Towards understanding of stepwise acid-base dissociation in systems inclined to tautomerism: Nitro derivatives of fluorescein in dimethyl sulfoxide. **J. Mol. Liquids,** 2023. 122540. https://doi.org/10.1016/j.molliq.2023.122540

10. N. O. Mchedlov-Petrossyan, V.S. Farafonov, A.V. Lebed . Solvatochromic and Acid–Base Molecular Probes in Surfactant Micelles: Comparison of Molecular Dynamics Simulation with the Experiment (a Review). **Liquids** 2023, *3*, 314–370, https://doi.org/10.3390/liquids3030021

14. Linguistic ability **Native:** Russian, Ukrainian;
Other: English, German

15. Sport **USSR Chess Master (1975)**