

Research/art/teacher profile of a person

Name and surname	doc. Ing. Martin Pisárčik, CSc.
Document type:	Research/art/teacher profile of a person
The name of the university	Comenius University Bratislava
The seat of the university	Šafárikovo námestie 6, 818 06 Bratislava
The name of the faculty	Faculty of Pharmacy
The seat of the faculty	Odbojárov 10, 832 32 Bratislava

I. - Basic information

I.1 - Surname	Pisárčik
I.2 - Name	Martin
I.3 - Degrees	doc. Ing. CSc.
I.4 - Year of birth	1964
I.5 - Name of the workplace	Department of Chemical Theory of Drugs, Faculty of Pharmacy, Comenius University
I.6 - Address of the workplace	Kalinčikova 8, 83232 Bratislava
I.7 - Position	Associate Professor
I.8 - E-mail address	pisarcik@foharm.uniba.sk
I.9 - Hyperlink to the entry of a person in the Register of university staff	https://www.portalvs.sk/regzam/detail/3764
I.10 - Name of the study field in which a person works at the university	7.3.1. Pharmaceutics

II. - Higher education and further qualification growth

II.1 - First degree of higher education

II.2 - Second degree of higher education

II.a - Name of the university or institution	Faculty of Electrotechnical Engineering, Slovak University of Technology, Bratislava
II.b - Year	1982 - 1987
II.c - Study field and programme	Solid state engineering

II.3 - Third degree of higher education

II.a - Name of the university or institution	Faculty of Chemical Technology, Slovak University of Technology, Bratislava
II.b - Year	1988 - 1992
II.c - Study field and programme	Technology of macromolecular systems

II.4 - Associate professor

II.a - Name of the university or institution	Faculty of Chemical Technology, Slovak University of Technology, Bratislava
II.b - Year	2009
II.c - Study field and programme	Technology of macromolecular systems

II.5 - Professor

II.6 - Doctor of Science (DrSc.)

III. - Current and previous employment

III.a - Occupation-position	III.b - Institution	III.c - Duration
Assistant Professor	Department of Polygraphy and Photochemistry, Faculty of Chemical Technology, Slovak University of Technology, Bratislava	1992 - 1995
Researcher	Department of Chemical Theory of Drugs, Faculty of Pharmacy, Comenius University, Bratislava	1995 - 2009
Associate Professor	Department of Chemical Theory of Drugs, Faculty of Pharmacy, Comenius University, Bratislava	2009 -

IV. - Development of pedagogical, professional, language, digital and other skills

IV.a - Activity description, course name, other	IV.b - Name of the institution	IV.c - Year
German language course, state exam	Language School 1SJS , Bratislava	1982 -1989

V. - Overview of activities within the teaching career at the university

V.4 - Overview of supervised final theses

V.4.1 - Number of currently supervised theses

V.4.b - Diploma (second degree) 2

V.4.c - Dissertation (third degree) 1

V.4.2 - Number of defended theses

V.4.b - Diploma (second degree) 2

V.5 - Overview of other courses taught in the current academic year according to study programmes

V.5.a - Name of the course	V.5.b - Study programme	V.5.c - Degree	V.5.d - Field of study
Molecular Modeling Basics	master degree programme	1.	7.3.1. Pharmaceutics
Metallopharmaceuticals and Nanoparticles as Modern Drugs	master degree programme	2.	7.3.1. Pharmaceutics
General and Inorganic Chemistry	master degree programme	1.	7.3.1. Pharmaceutics

VI. - Overview of the research/artistic/other outputs

VI.1 - Overview of the research/artistic/other outputs and the corresponding citations

VI.1.1 - Number of the research/artistic/other outputs

VI.1.a - Overall 63

VI.1.b - Over the last six years 25

VI.1.2 - Number of the research/artistic/other outputs registered in the Web of Science or Scopus databases

VI.1.a - Overall 44

VI.1.b - Over the last six years 16

VI.1.3 - Number of citations corresponding to the research/artistic/other outputs

VI.1.a - Overall 659

VI.1.b - Over the last six years 408

VI.1.4 - Number of citations registered in the Web of Science or Scopus databases

VI.1.a - Overall 553

VI.1.b - Over the last six years 328

VI.1.5 - Number of invited lectures at the international, national level

VI.1.a - Overall 3

VI.1.b - Over the last six years 2

VI.2 - The most significant research/artistic/other outputs

- 1 Devínsky, F., Pisárčik, M., Lukáč, M.
Cationic Amphiphiles: Self-Assembling Systems for Biomedicine and Biopharmacy, pp. 1-295. , NOVA Publishers (2017)
DOCUMENT TYPE: Book
- 2 Pisárčik M., Imae T., Devínsky F., Lacko I., Bakoš D.: Aggregation Properties of Sodium Hyaluronate with Alkanediyl-alpha, omega- bis(dimethylalkyl-ammonium bromide) Surfactant in Sodium Chloride Aqueous Solution, Journal of Colloid and Interface Science 228 (2000) 207-212.
- 3 Pisárčik M., Imae T., Devínsky F. and Lacko I.: Aggregates of Sodium Hyaluronate with Cationic and Aminoxide Surfactants in Aqueous Solution - Static Light Scattering Study, Colloids and Surfaces 183-185:1-3: (2001) 555-562.
- 4 Pisárčik M., Rosen M.J., Polakovičová M., Devínsky F., Lacko I.: Area per surfactant molecule values of gemini surfactants at the liquid-hydrophobic solid interface, Journal of Colloid and Interface Science 289 (2005) 560-565.
- 5 Pisárčik M., Polakovičová M., Devínsky F., Lacko I.: Dynamic light scattering, interfacial properties and conformational analysis of biodegradable quarternary ammonium surfactants, Langmuir 22 (2006) 9160-9168.

VI.3 - The most significant research/artistic/other outputs over the last six years

- 1 Pisárčik M., Bajcura M., Lukáč M., Devínsky F., Bilková A., Bilka F., Horváth B.: Self-aggregation of cationic gemini surfactants with amide groups in the spacer and variable alkyl chain length. Colloid and Polymer Science, open access (2023)
- 2 Pisárčik M., Lukáč M., Jampílek J., Pašková L., Bilka F., Bilková A., Devínsky F., Val'ko J., Horáková R., Hošek J., Brezina M., Opravil T.: Controlled synthesis of gemini surfactant-capped gold nanoparticles. Gemini structure-nanoparticle properties relationship study. Journal of Molecular Liquids 365 (2022) 120210.
- 3 Pisárčik M., Lukáč M., Jampílek J., Bilka F., Bilková A., Pašková L., Devínsky F., Horáková R., Opravil T.: Silver nanoparticles stabilised with cationic single-chain surfactants. Structure-physical properties-biological activity relationship study. Journal of Molecular Liquids 272 (2018) 60-72
- 4 Pisárčik M., Lukáč M., Jampílek J., Bilka F., Bilková A., Pašková L., Devínsky F., Horáková R., Opravil T.: Phosphonium surfactant stabilised silver nanoparticles. Correlation of surfactant structure with physical properties and biological activity of silver nanoparticles. Journal of Molecular Liquids 314 (2020) 113683.
- 5 Pisárčik M., Lukáč M., Jampílek J., Bilka F., Bilková A., Pašková L., Devínsky F., Horáková R., Brezina M., Opravil T.: Silver nanoparticles stabilised with phosphorus-containing heterocyclic surfactants. Synthesis, physico-chemical properties and biological activity determination. Nanomaterials 2021 Jul 22;11(8):1883.

VI.4 - The most significant citations corresponding to the research/artistic/other outputs

- 1 Paper:
Pisárčik, M., Devínsky, F., Pupák, M.: Determination of micelle aggregation numbers of alkyltrimethylammonium bromide and sodium dodecyl sulfate surfactants using time-resolved fluorescence quenching, Open Chemistry, 13 (2015) 922-931

Citations:

1.
Olszok, V., Rivas-Botero, J., Wollmann, A., Benker, B., Weber, A.P.
Particle-induced nanobubble generation for material-selective nanoparticle flotation (2020) Colloids and Surfaces A: Physicochemical and Engineering Aspects, 592, art. no. 124576, .

2.
Lingwood, M.D., Schepergerdes, B.J., Hermosillo, D.-M.T., Delgado, J.N., Sanders, K.P.
Probe Molecules for Pulsed-Field-Gradient Diffusion Nuclear Magnetic Resonance Experiments on Micelles
(2020) *Journal of Surfactants and Detergents*, 23 (2), pp. 319-325.
3.
Medina, S.C., Farinha, A.S.F., Emwas, A.-H., Tabatabai, A., Leiknes, T.
A fundamental study of adsorption kinetics of surfactants onto metal oxides using quartz crystal microbalance with dissipation (QCM-D)
(2020) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 586, art. no. 124237, . Cited 1 time.
4.
Aziziyan, M.R., Hassen, W.M., Sharma, H., Shirzaei Sani, E., Annabi, N., Frost, E.H., Dubowski, J.J.
Sodium dodecyl sulfate decorated *Legionella pneumophila* for enhanced detection with a GaAs/AlGaAs nanoheterostructure biosensor
(2020) *Sensors and Actuators, B: Chemical*, 304, art. no. 127007, . Cited 2 times.
5.
Kohlmann, T., Goez, M.
Pyrene-viologen complexes in SDS micelles: Quenching parameters and use as probes of aggregation numbers
(2020) *Photochemical and Photobiological Sciences*, 19 (1), pp. 71-79.
6.
Pashirova, T.N., Burilova, E.A., Lukashenko, S.S., Gaysin, N.K., Gnezdilov, O.I., Sapunova, A.S., Fernandes, A.R., Voloshina, A.D., Souto, E.B., Zhiltsova, E.P., Zakharova, L.Y.
Nontoxic antimicrobial micellar systems based on mono- and dicationic Dabco-surfactants and furazolidone: Structure-solubilization properties relationships
(2019) *Journal of Molecular Liquids*, 296, art. no. 112062, . Cited 2 times.
7.
Llombart, P., Palafox, M.A., MacDowell, L.G., Noya, E.G.
Structural transitions and bilayer formation of CTAB aggregates
(2019) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 580, art. no. 123730, . Cited 1 time.
8.
Pacheco-Blas, M.D.A., Vicente, L.
Molecular dynamics simulation of removal of heavy metals with sodium dodecyl sulfate micelle in water
(2019) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 578, art. no. 123613, .
9.
Sharker, K.K., Yusa, S.-I., Phan, C.M.
Micellar formation of cationic surfactants (2019) *Heliyon*, 5 (9), art. no. e02425, . Cited 1 time.
10.
Zueva, O.S., Rukhlov, V.S., Gazeeva, E.V., Mongush, Y.K.
Mathematical modeling of surfactant self-organization in water solution in the presence of carbon nanotubes
(2019) *IOP Conference Series: Earth and Environmental Science*, 288 (1), art. no. 012059, .
11.
Baccile, N., Delbeke, E.I.P., Brennich, M., Seyrig, C., Everaert, J., Roelants, S.L.K.W., Soetaert, W., Van Bogaert, I.N.A., Van Geem, K.M., Stevens, C.V.
Asymmetrical, Symmetrical, Divalent, and Y-Shaped (Bola)amphiphiles: The Relationship between the Molecular Structure and Self-Assembly in Amino Derivatives of Sophorolipid Biosurfactants (2019) *Journal of Physical Chemistry B*, 123 (17), pp. 3841-3858. Cited 2 times.
12.
Mchedlov-Petrosyan, N.O., Farafonov, V.S., Cheipesh, T.A., Shekhovtsov, S.V., Nerukh, D.A., Lebed, A.V.
In search of an optimal acid-base indicator for examining surfactant micelles: Spectrophotometric studies and molecular dynamics simulations
(2019) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 565, pp. 97-107. Cited 2 times.

Cited 2 times.

13.

Mirgorodskaya, A.B., Kushnazarova, R.A., Lukashenko, S.S., Zakharova, L.Y.

Aggregation behavior and solubilization properties of 3-hydroxypiperidinium surfactants (2019) Russian Chemical Bulletin, 68 (2), pp. 328-333. Cited 1 time.

14.

Needham, D., Kinoshita, K., Utoft, A.

Micro-surface and -interfacial tensions measured using the micropipette technique:

Applications in ultrasound-microbubbles, oil-recovery, lungsurfactants, nanoprecipitation, and microfluidics

(2019) Micromachines, 10 (2), art. no. 105, . Cited 3 times.

15.

Gawali, S.L., Zhang, M., Kumar, S., Ray, D., Basu, M., Aswal, V.K., Danino, D., Hassan, P.A.

Discerning the Structure Factor of Charged Micelles in Water and Supercooled Solvent by Contrast Variation X-ray Scattering

(2019) Langmuir, 35 (30), pp. 9867-9877. Cited 1 time.

16.

Saraf, A., Sharma, S., Sachar, S.

Insights into the Interactions of Sulfamethoxazole with Organized Assemblies of Ionic and Nonionic Surfactants

(2018) Langmuir, 34 (48), pp. 14624-14632. Cited 2 times.

17.

Rusanov, A.I.

On the Localization of CMC and Maximum Concentration of Surface-Active Ions According to the Theory of Micellar Solutions

(2018) Colloid Journal, 80 (6), pp. 691-697.

18.

Movchan, T.G., Rusanov, A.I., Plotnikova, E.V.

Calculation Aspects of Diffusion Coefficients in Micellar Solutions of Ionic Surfactants

(2018) Colloid Journal, 80 (6), pp. 660-666.

19.

Mirgorodskaya, A.B., Kushnazarova, R.A., Lukashenko, S.S., Voloshina, A.D., Lenina, O.A.,

Zakharova, L.Y., Sinyashin, O.G.

Carbamate-bearing surfactants: Micellization, solubilization, and biological activity

(2018) Journal of Molecular Liquids, 269, pp. 203-210. Cited 4 times.

20.

Rusanov, A.I.

Transport Properties of Surfactants in Micellar Systems

(2018) Colloid Journal, 80 (5), pp. 537-540.

21.

Rusanov, A.I.

Theory of surfactant diffusion in micellar systems with variable aggregation numbers

(2018) Colloids and Surfaces A: Physicochemical and Engineering Aspects, 551, pp. 158-164.

Cited 4 times.

22.

van Dam, E.P., Bakker, H.J.

Structure of micelles and micro-emulsions probed through the molecular reorientation of water

(2018) Chemical Physics, 512, pp. 111-115. Cited 1 time.

23.

Farafonov, V.S., Lebed, A.V., Mchedlov-Petrosyan, N.O.

Solvatochromic betaine dyes of different hydrophobicity in ionic surfactant micelles: Molecular dynamics modeling of location character

(2018) Colloids and Surfaces A: Physicochemical and Engineering Aspects, 538, pp. 583-592.

Cited 3 times.

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Rusanov, A.I.

Toward a Theory of Diffusion of a Nonionic Surfactant with Variable Aggregation Number in a Micellar System

(2018) Colloid Journal, 80 (1), pp. 81-85. Cited 3 times.

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- Zueva, O.S., Mongush, Y.K., Makarova, A.O.
Carbon nanotubes microenvironment in ionic surfactant water solutions
(2018) Solid State Phenomena, 284 SSP, pp. 713-718. Cited 4 times.
26.
Illa-Tuset, S., Malaspina, D.C., Faraudo, J.
Coarse-grained molecular dynamics simulation of the interface behaviour and self-assembly of CTAB cationic surfactants
(2018) Physical Chemistry Chemical Physics, 20 (41), pp. 26422-26430. Cited 5 times.
27.
Rasteiro, L.F., Vieira, L.H., Santilli, C.V., Martins, L.
Surfactant-assisted synthesis of Mo-V mixed oxide catalysts for upgraded one-step conversion of glycerol to acrylic acid
(2018) RSC Advances, 8 (22), pp. 11975-11982. Cited 2 times.
28.
Rusanov, A.I.
On the Problem of Determining Aggregation Numbers from Surface Tension Measurements
(2017) Langmuir, 33 (44), pp. 12643-12650. Cited 2 times.
29.
González-Rubio, G., Díaz-Núñez, P., Rivera, A., Prada, A., Tardajos, G., González-Izquierdo, J., Bañares, L., Llombart, P., Macdowell, L.G., Palafox, M.A., Liz-Marzán, L.M., Peña-Rodríguez, O., Guerrero-Martínez, A.
Femtosecond laser reshaping yields gold nanorods with ultranarrow surface plasmon resonances
(2017) Science, 358 (6363), pp. 640-644. Cited 88 times.
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Tarai, M., Mishra, A.K.
Application of Multivariate Curve Resolution-Alternate Least Square Technique on Extracting Pure Spectral Components from Multiple Emitting Systems: a Case Study
(2017) Journal of Fluorescence, 27 (6), pp. 2023-2036.
31.
Rusanov, A.I.
Micellization theory based on the law of mass action with a variable aggregation number
(2017) Colloid Journal, 79 (5), pp. 654-660. Cited 2 times.
32.
Farafonov, V.S., Lebed, A.V., McHedlov-Petrosyan, N.O.
Character of Localization and Microenvironment of Solvatochromic Reichardt's Betaine Dye in Sodium n-Dodecyl Sulfate and Cetyltrimethylammonium Bromide Micelles: Molecular Dynamics Simulation Study
(2017) Langmuir, 33 (33), pp. 8342-8352. Cited 9 times.
33.
Shulevich, Y.V., Motyakin, M.V., Wasserman, A.M., Zakharova, Y.A., Dukhanina, E.G., Navrotskii, A.V., Novakov, I.A.
On the feasibility of using sodium octyl sulfate micelles for template polymerization of a cationic monomer
(2016) Colloid Journal, 78 (6), pp. 808-815.

VI.5 - Participation in conducting (leading) the most important research projects or art projects over the last six years

- | | |
|---|--|
| 1 | <p>2016 - 2019</p> <p>Project VEGA of The Ministry of Education, Science, Research and Sport of the Slovak Republic, No. 1/0298/16</p> <p>Title: Novel self-assembling molecules for gene delivery.</p> <p>Principal investigator</p> |
| 2 | <p>2021 - 2023</p> <p>Project VEGA of The Ministry of Education, Science, Research and Sport of the Slovak Republic, No. 1/0686/21</p> <p>Title: Green biological synthesis of silver nanoparticles. Structural analysis, antimicrobial and antineoplastic activity.</p> <p>Principal investigator</p> |

VII. - Overview of organizational experience related to higher education and research/artistic/other activities

VII.a - Activity, position	VII.b - Name of the institution, board	VII.c - Duration
Senior lecturer in General and Inorganic Chemistry	Department of Chemical Theory of Drugs, Faculty of Pharmacy, Comenius University	since 2017
Member of the Expert Body for Pharmaceutical Chemistry Study Programme	Faculty of Pharmacy, Comenius University	since 04/2023
Member of the Scientific Board of the Faculty of Pharmacy	Faculty of Pharmacy, Comenius University	03/2023 - 08/2023
Member of the Study Programme Council for Multiple Study Programmes of the Faculty of Pharmacy	Faculty of Pharmacy, Comenius University	05/2023 - 02/2025

VIII. - Overview of international mobilities and visits oriented on education and research/artistic/other activities in the given field of study

VIII.a - Name of the institution	VIII.b - Address of the institution	VIII.c - Duration (indicate the duration of stay)	VIII.d - Mobility scheme, employment contract, other (describe)
Department of Physical Chemistry, University of Bayreuth	Bayreuth, Germany	09/1991 - 07/1992	Ph.D. research stay , funds granted by the German Bayerisches Ministerium für Unterricht, Kultus, Wissenschaft und Kunst
Research Center of Materials Science, Nagoya University	Nagoya, Japan	09/1998 - 07/1999	Research stay, funds granted by the Ministry of Education, Science, Sports and Culture (Monbusho)
Surfactant Research Institute, Brooklyn College	Brooklyn, New York, USA	07/2001 - 08/2002	Postdoctoral stay, funds granted by the City University of New York

IX. - Other relevant facts

Date of last update

19.09.2023