

Prospective supervisor's form

Name of the supervisor: Janusz Stangret

Academic title: Prof., PhD, DSci., Eng.

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Gdańsk University of Technology Faculty of Chemistry

Department of Physical Chemistry

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Personal web page: <https://pg.edu.pl/>

Discipline: chemical sciences [NCh] none

Optional

Key words (obligatory four key words describing research interests / expertise):

physical chemistry

spectroscopy

aqueous solutions

biomelecules

Bibliometric indicators

1. Number of journal publications in WoS/ Scopus 64/62

2. Citations excluding self-citations WoS 1053 Scopus 1058

3. Hirsch index WoS 22 Scopus 22

1. The number of PhD students who have graduated under your supervision: 5

2. The number of PhD students currently supervised:

a. within the current doctoral school

b. within doctoral studies (previous system) 1

3. Are you currently accepting new PhD students:

a. Polish Yes/No Yes

b. Foreign Yes/No No

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Research interests or topics offered for PhD research (no more than 2000 characters)ⁱⁱ

My research interests relate to intermolecular interactions in solutions, with particular emphasis on systems of biological importance. Studies has recently been focused on understanding the molecular mechanisms of the influence of accompanying substances, of various chemical nature, on the stability of the native structure and the functioning of biomolecules (proteins and DNA) in aqueous solutions. Vibrational spectroscopy is the leading experimental method in these studies. The interpretation of spectral results is supported by theoretical methods. In the scope of such issues I also anticipate the subject of doctoral theses.

Funding or special equipment needed to carry out a PhD project ⁱⁱⁱ:

1. Is funding available for experimental work: *Yes/No/not needed*

2. Is the equipment needed to complete a PhD project
available in your lab/department: *Yes/No/not needed*

Most important publications – no more than 5 published after 1.01.2018

No	Authors/title/journal	Number of points according to the current list of the Ministry of Science and Higher Education	Publication year
1.	A. Panuszko, J. Stangret, B. Nowosielski, P. Bruździak. Interactions between hydration spheres of two different solutes in solution: The least squares fitting with constraints as a tool to determine water properties in ternary systems. <i>J. Mol. Liquids</i> 2020, 310, 113181.	100	2020
2.	A. Panuszko, P. Bruździak, M. Śmiechowski, M. Stasiulewicz, J. Stefaniak, J. Stangret. DMSO hydration redefined: Unraveling the hydrophobic hydration of solutes with a mixed hydrophilic–hydrophobic characteristic. <i>J. Mol. Liquids</i> 2019, 294, 111661.	100	2019

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3.	A. Panuszko, M. G. Nowak, P. Bruździak, M. Stasiulewicz, J. Stangret. Amides as models to study the hydration of proteins and peptides – spectroscopic and theoretical approach on hydration in various temperatures. J. Mol. Liquids 2019, 278, 706–715.	100	2019
4.	P. Bruździak, A. Panuszko, B. Piotrowski, J. Stangret. Structural changes of a simple peptide—Trpzip-1—in aqueous solutions and the corresponding hydration phenomena under the influence of temperature. J. Mol. Liquids 2019, 277, 532–540.	100	2019
5.	P. W. Rakowska, M. Kogut, J. Czub, J. Stangret. Effect of osmolytes of different type on DNA behavior in aqueous solution. Experimental and theoretical studies. J. Mol. Liquids 2018, 271, 186–201.	100	2018

Most recent externally funded projects you were involved in – no more than 3

No	Project title, the name of the Principal Investigator (PI) and the institution the project was carried out	Years	Role in the project ^{iv}
1.	NCN Opus nr 2013/11/B/NZ1/02258, Protein stability in aqueous osmolyte solutions based on a complementary experimental and theoretical approach, Gdańsk University of Technology, Department of Physical Chemistry, Janusz Stangret (PI).	2014-2017	PI
2.	N N204 3799 33, Ministry of Science and Higher Education, Characteristics of hydration spheres of selected electrolytes and non-electrolytes as models of biomolecules hydration, Gdańsk University of Technology, Department of Physical Chemistry, Janusz Stangret (PI).	2007-2010	PI
3.	N N301 1054 38, Ministry of Science and Higher Education, Characteristics of interactions in protein-osmolyte-water system, Gdańsk University of Technology, Department of Physical Chemistry, Janusz Stangret (PI).	2010-2011	PI

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Additional relevant information (no more than 1600 characters)^v

Two of my PhD students defended themselves with distinction and received awards with their doctoral dissertation.
Two of my PhD students have already obtained DSci degree.

ⁱ You may select up to two disciplines out of 12 disciplines represented in the Doctoral School

ⁱⁱ Observe the limit of not more than 2000 characters

ⁱⁱⁱ Leave only one answer

^{iv} Select the role in the project: PI stands for principal investigator (refers to the holder of an independent grant and the lead researcher for the grant project), Co-I for co-investigator (Co-I assists the principal investigator in the management and leadership of the research project), R for researcher

^v Add any other relevant information e.g. awards for PhD students whom you supervised (no more than 1600 characters)