

"Advanced course in mass spectrometry"

CURRICULUM VITAE

Prof. Dr. Hab. Piotr Tadeusz Stefanowicz



1 Short CV

Address: Faculty of Chemistry, University of Wrocław , Joliot-Curie 14 str. 50-383 Wrocław

Citizenship: Polish. **Occupation or position held:** Full Professor

Education:

Professor title		04/2019
Dr. hab. (organic chemistry)	University of Wrocław, Faculty of Chemistry	04/2010
Dr. (organic chemistry)	University of Wrocław, Faculty of Chemistry	05/1993
mgr. (chemistry)	University of Wrocław, Faculty of Chemistry	06/1984

Professional experience

2019-now	University of Wrocław, Faculty of Chemistry
Position	Full professor, Head of Peptide engineering group, Head of the Doctoral College in Chemistry of the Doctoral School
Research work	Investigations of biopolymers by mass spectrometry, developing new methods of peptide synthesis
2015-2019	University of Wrocław, Faculty of Chemistry
Position	Associate professor
Research work	Investigations of biopolymers by mass spectrometry, developing methods of biomarkers and bioeffectors analysis, designing self-organizing peptides
2001-2015	University of Wrocław, Faculty of Chemistry

Position	Assistant professor
Research work	Mass spectrometry of peptides, solid phase synthesis, designing of immunosuppresses
1998-2001	Montreal, Biotechnology Research Institute, National Research Council
Position	Associate Research Officer
Research	Combinatorial synthesis, mass spectrometry of natural products
1994-1998	University of Wrocław, Faculty of Chemistry.
Position	Assistant professor
Research	peptides spectropolarimetry, solid phase synthesis
1986-1993	University of Wrocław, Faculty of Chemistry
Position	Assistant
Research	peptide spectrofluorimetry, kinetic investigation of acyl transfer

Topics:

1. Mass spectrometry
2. Peptide synthesis
3. Natural products chemistry

Fellowships

Biotechnology Research Institute, National Research Council (Montreal, Canada), Dr Y. Konishi, Associate Research Officer, 1998-2001

University of Southern Denmark, (Odense, Denmark) 2012, Short term scientific mission (COST)

Scientific activity details

- the co-author of over 130 publications
- seven PhD students promoted
- V conference of Polish Mass Spectrometry Society (Sobótka 26-29.IX.2016), Chairman
- IV conference of Polish Mass Spectrometry Society (Trzebnica 25-29 V2014), Chairman
- Co-organizer of Joint Conference of Polish Mass Spectrometry Society and German Mass Spectrometry Society, Poznań 2012
- Co-organizer 18 Polish Peptide Symposium (Vice-chairman)

- Chairman of Polish society for Mass Spectrometry (2010-2018)
- reviewer of over 80 manuscripts for international scientific journals
- reviewer of scientific projects: National Science Center in Poland, Ministry of Science and Higher Education in Poland
- expert of Synthesis and Materials Panels in the National Science Center, Poland

Current and completed research projects

1. Principal investigator in project UMO-2015/19/B/ST5/00659 „Study on cyclic peptides conversion caused by the transfer of acyl group from nitrogen atom onto sulfur atom” (NCN-Opus, ST-5)
2. Principal investigator project „Studies on substrate specificity and potential synthetic applications of a new enzyme omniligase” (KNOW, Faculty of Chemistry, University of Wrocław)
3. Principal investigator in completed project 2012/07/B/ST5/00821 „The search for catalytic systems created by metallacrown formation controlled self-assembly of polypeptides into tetra helical boundless” (NCN, Opus ST-5)
4. Principal investigator in completed project 3T09A 029 28 „The development of a new method of peptides glycation on solid support” (KBN)
5. Co- investigator in project „ The synthesis and fragmentation analysis of peptide-betaine conjugates. Search for new isobaric labels for quantitative self- organization proteomics. (principal investigator prof. Zbigniew Szewczuk, NCN-Opus)
6. Co- investigator in project „ Biotechnological and pharmacological potential of bee products microbiota. (principal investigator dr hab. inż. Piotr Szweda, NCN-Opus)
7. The supervisor of project „Application of N-(2-thioethyl)glycine analogues in orthogonal cleavage of peptides from solid support” (NCN-Preludium; principal investigator mgr Magdalena Wierzbicka)
8. The supervisor of project „Synthetic self-assembled models of transmembrane proteins” (NCN-Preludium; principal investigator mgr Grzegorz Wołczański)
9. The supervisor of project: „The application of macrocycles formed by substituted

- thiocyanuric acid as templates for of peptide chains" (NCN-Preludium; principal investigator Marta Cal)
10. The supervisor of project: „A development of a method of micro-scale synthesis of peptides labelled with stable isotopes for quantitative proteomics" (NCN-Preludium; principal investigator Maciej Modzel).
 11. Co-investigator in completed project 6P05A 013 21 „ Further studies on structurally-chemical determinants of immunomodulatory activity of HLA family proteins and ubiquitin" (2001-2003, KBN principal investigator prof. Zbigniew Szewczuk).
 12. Co-investigator in completed project 3T09A 036 18 „Search for the new peptides in flax" (KBN, principal investigator dr. Bolesław Picur)
 13. Co-investigator in completed project 4P0502314 „Studies on thymopenthin-like fragments of major histocompatibility complex and ubiquitin „ (1998-2000 KBN, principal investigator prof. Zbigniew Szewczuk).
 14. Co-investigator in completed project 6P20714706 „Immunomodulatory and adhesive region of HLA-DQ protein" (1993-1996 KBN, principal investigator prof. Zbigniew Szewczuk).

2 Selection of the most relevant publications

1. Modzel Maciej, Stefanowicz Piotr, CID-Induced Formation of Deprotonated Cyclic Peptide Ions From Anionic Adducts, *Journal of Mass Spectrometry*, **2025**, 60, e5114/1-e5114/
2. Waliczek Mateusz, Stefanowicz Piotr, Shining a Light on Peptide and Protein Synthesis: Light-Emitting-Diode Driven Desulfurization of Cysteine to Alanine with Rose Bengal, *Organic Letters*, **2025**, 27, 1159-1163
3. Kijewska Monika, Zawadzka Michalina, Śleziak Mikołaj, Stefanowicz Piotr, Microwave-assisted solid-phase synthesis of lactosylated peptides for food analytical application, *Food Chemistry*, **2024**, 433, 137367/1-137367/8
4. Pehlivan Özge, Wojtkowiak Kamil, Jezierska Aneta, Waliczek Mateusz, Stefanowicz Piotr, Photochemical Transformations of Peptides Containing the N-(2-Selenoethyl)glycine Moiety, *ACS Omega*, **2024**, 9, 16775-16791
5. Kijewska Monika, Wołczański Grzegorz, Kosson Piotr, Wieczorek Robert, Lisowski Marek, Stefanowicz Piotr, Stapling of leu-enkephalin analogs with bifunctional reagents for prolonged analgesic activity, *Chemical Communications*, **2024**, 60, 3023-3026
6. Bąchor Remigiusz, Modzel Maciej, Cebrat Marek, Kijewska Monika, Waliczek Mateusz, Kuczer Mariola, Biernat Monika, Stefanowicz Piotr, Kluczyk Alicja, Two is better than one: Deuterium in analytical mass spectrometry, *TrAC-Trends in Analytical Chemistry*, **2024**, 178, 117842/1-117842/10

7. Wołczański Grzegorz, Gil Wojciech, Cichos Jakub, Lisowski Marek, Stefanowicz Piotr, Alkyl Thiocyanurates as Thioester Mimetics. Transthioesterification and Ligation Reactions with High Potential in Dynamic Covalent Chemistry, *Journal of Organic Chemistry*, **2023**, 88, 8192-8202
8. Kijewska Monika, Zawadzka Michalina, Stefanowicz Piotr, High-Temperature, Solid-Phase Reaction of α -Amino Groups in Peptides with Lactose and Glucose: An Alternative Mechanism Leading to an α -Ketoacyl Derivative, *Journal of Agricultural and Food Chemistry*, **2023**, 71, 5796-5803
9. Kijewska Monika, Wołczański Grzegorz, Światowska Marta, Kędziora Katarzyna, Pawlicki Miłosz, Stefanowicz Piotr, Peptide Stapling with Boronate Esters- A Reversible Folding of (Artificial) Peptide Chain to α -Helix, *Chemistry-A European Journal*, **2023**, 29, e202301370/1-e202301370/7
10. Pehlivan Özge, Waliczek Mateusz, Kijewska Monika, Stefanowicz Piotr, Selenium in Peptide Chemistry, *Molecules*, **2023**, 28, 3198/1-3198/18
11. Waliczek Mateusz, Gancarz Wiktoria, Pochwała Paulina, Pehlivan Özge, Stefanowicz Piotr, Visible Light-Induced Templated Metathesis of Peptide–Nucleic Acid Conjugates with a Diselenide Bridge, *Biomolecules*, **2023**, 13, 1676/1-1676/14
12. Kijewska Monika, Zawadzka Michalina, Włodarczyk Karolina, Stefanowicz Piotr, HPLC–free method of synthesis of isotopically labeled deoxyfructosylated peptides, *Analytical and Bioanalytical Chemistry*, **2022**, 414, 3803-3811
13. Kijewska Monika, Gąsczyk Dorota, Bąchor Remigiusz, Stefanowicz Piotr, Szewczuk Zbigniew, Analysis of fragmentation pathways of peptide modified with quaternary ammonium and phosphonium group as ionization enhancers, *Molecules*, **2021**, 26, 6964/1-6964/23
14. Qureshi Kamal A., Bholay Avinash D., Rai Pankaj K., Mohammed Hamdoon A., Khan Riaz A., Azam Faizul, Jaremko Mariusz, Emwas Abdul-Hamid, Stefanowicz Piotr, Waliczek Mateusz, Kijewska Monika, Ragab Ehab A., Rehan Medhat, Elhassan Gamal O., Anwar Md Jamir, Prajapati Dinesh K., Isolation, characterization, anti-MRSA evaluation, and in-silico multi-target anti-microbial validations of actinomycin X2 and actinomycin D produced by novel *Streptomyces smyrnaeus* UKAQ_23., *Scientific Reports*, **2021**, 11, 14539/1-14539/21
15. Kijewska Monika, Sharfalddin Abeer A., Jaremko Łukasz, Cal Marta, Setner Bartosz, Siczek Miłosz, Stefanowicz Piotr, Hussien Mostafa A., Emwas Abdul-Hamid, Jaremko Mariusz, Lossen rearrangement of p-toluenesulfonates of N-oxyimides in basic condition, theoretical study, and molecular docking., *Frontiers in Chemistry*, **2021**, 9, 662533/1-662533/11
16. Wierzbicka Magdalena, Waliczek Mateusz, Dziadecka Anna, Stefanowicz Piotr, One-pot cyclization and cleavage of peptides with N-terminal cysteine via the N,S-acyl shift of the N-2-[thioethyl]glycine residue., *Journal of Organic Chemistry*, **2021**, 86, 12292–12299
17. Kijewska Monika, Koch Tomasz, Waliczek Mateusz, Konieczny Andrzej, Stefanowicz Piotr, Szewczuk Zbigniew, Selective ESI-MS detection of carbonyl containing compounds by aminooxyacetic acid immobilized on a resin., *Analytica Chimica Acta*, **2021**, 1176, 338767/1-338767/14
18. Bąchor Remigiusz, Randaccio Enrico, Lachowicz Joanna I., Stefanowicz Piotr, Nurchi Valeria M., Szewczuk Zbigniew, Synthesis and mass spectrometry analysis of mimosine-containing peptides., *International Journal of Peptide Research and Therapeutics*, **2021**, 27, 379-384
19. Waliczek Mateusz, Pehlivan Özge, Stefanowicz Piotr, A photochemical transformation of cyclic peptides leading to formation of selenolanthionine bridges., *New Journal of Chemistry*, **2020**, 44, 11433-11436,
20. Kijewska Monika, Nuti Francesca, Wierzbicka Magdalena, Waliczek Mateusz, Ledwoń Patrycja, Staśkiewicz Agnieszka, Real-Fernandez Feliciano, Sabatino Giuseppina, Rovero Paolo, Stefanowicz Piotr, Szewczuk Zbigniew, Papini Anna Maria, An optimised di-boronate-ChemMatrix affinity chromatography to trap

deoxyfructosylated peptides as biomarkers of glycation., *Molecules*, **2020**, 25, 755/1-755/15

21. Waliczek Mateusz, Wierzbicka Magdalena, Arkuszewski Maciej, Kijewska Monika, Jaremko Łukasz, Rajagopal Priyadharshni, Szczepski Kacper, Sroczyńska Amanda, Jaremko Mariusz, Stefanowicz Piotr, Attempting to synthesize lasso peptides using high pressure., *PLoS One*, **2020**, 15, e0234901/1-e0234901/21

22. Bąchor Remigiusz, Gąsczyk Dorota, Panek-Laszczyńska Karolina, Konieczny Andrzej, Witkiewicz Wojciech, Stefanowicz Piotr, Szewczuk Zbigniew, Detection of podocin in human urine sediment samples by charge derivatization and LC-MS-MRM method., *International Journal of Molecular Sciences*, **2020**, 21, 3225/1-3225/13

23. Kijewska Monika, Czerwińska Angelika, Al-Harhi Samah, Wołczański Grzegorz, Waliczek Mateusz, Emwas Abdul-Hamid, Jaremko Mariusz, Jaremko Łukasz, Stefanowicz Piotr, Szewczuk Zbigniew, Intramolecularly stapled amphipathic peptides via a boron–sugar interaction., *Chemical Communications*, **2020**, 56, 8814-8817