Sylwia **Smarzewska**

Assistant Professor – University of Lodz

sylwia.smarzewska@chemia.uni.lodz.pll | www.uni.lodz.pl/en/employee/sylwia-smarzewska |

0000-0001-5133-2556 | Scopus bibliometric data: citations **631** · documents **54** · h-index **16**

Currently held positions

Department of Inorganic and Analytical Chemistry, Faculty of Chemistry *University of Lodz*

Assistant Professor

Scientific profile and collaborations

I am an expert in the application of **graphene derivatives** in electroanalysis, with a focus on enhancing **sensor performance and analytical sensitivity**. My research explores the potential of graphene-modified electrodes for various **electrochemical applications**.

One of my key research areas is the electroanalysis of **DNA interactions**, where I investigate how different compounds interact with DNA on a molecular level. I have made significant contributions to understanding the electrochemical behaviour of DNA and its interactions with bioactive molecules, which could have implications in **drug development and biomolecular sensing**.

I am also focused on developing **environmentally friendly electrode materials**, aiming to reduce the environmental impact of electroanalysis.

Additionally, I am involved in the development of determination methods of **biologically active compounds**, applying my electroanalytical expertise to analyse **various biological matrices**.

Overall, my work pushes the boundaries of analytical chemistry, aiming to create more efficient, sustainable, and accurate electrochemical methods/sensors for biomedical and environmental applications.

In addition to my academic work, one of my greatest successes has been in **commercialization**. I am proud to have brought three products to market, despite their **diverse fields of application**. One of these is **roasted sesame seed oil**, which now proudly features **the logo of the Faculty of Chemistry on its bottle**. Another success includes two types of **multielectrodes**, which industrial versions have been developed on the basis of my **EPO and PCT patent applications**.

These accomplishments reflect my ability to bridge the gap between scientific research and practical, commercial solutions.

Selected publications

2022 ***Highly Sensitive Determination of Tenofovir in Pharmaceutical Formulations and Patients Urine - Comparative Electroanalytical Studies Using Different Sensing Methods*** **[link]**

2024 ***Electrochemical and theoretical studies of the interaction between anticancer drug ponatinib and dsDNA*** **[link]**

2020 ***Rapid electroanalytical procedure for sesamol determination in real samples*** **[link]**

Research grants

Principal Investigator: 2 grants: NCN, IDUB

Project Manager: 3 grants: ScienceHub – MNiSW

Co-Investigator: 2 grants: NCN

Obtained patents

2 patents given by Polish/European Patent Office

International research stays

Republic of Macedonia Skopje, Ss. Cyril and Methodius University, in the team of Prof. Valentin Mircheski (2 stays)

Czech Republic Pardubice, University of Pardubice, Faculty of Chemical Technology, Faculty of Natural Sciences and Mathematics, in the team of Prof. Karel Vytras (4 stays)

Turkey Ankara, Ankara Univeristy, Faculty of Pharmacy, in the team of Prof. Sibel Ozkan