



Mariola Brycht

ASSOCIATE PROFESSOR – UNIVERSITY OF ŁÓDŹ

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Currently held positions

Department of Inorganic and Analytical Chemistry, Faculty of Chemistry

University of Łódź

ASSOCIATE PROFESSOR

Faculty coordinator of the CEEPUS network “Education of Modern Analytical and Bioanalytical Methods (network no: CIII-CZ-0212)”

MEMBERSHIP

Electroanalysis Team of the Analytical Chemistry Committee of the Polish Academy of Sciences

MEMBERSHIP

Commission for the Development and Promotion of the Achievements of Young Scientists of the Polish Academy of Sciences

Division in Lublin

MEMBERSHIP

Scientific profile and collaborations

I work as an associate professor at the **Faculty of Chemistry, University of Łódź**. My research focuses on the development of **advanced electrochemical sensors** based on **non-traditional carbon materials**, particularly **boron-doped diamond electrodes (BDDE)** and **graphene derivatives**, which formed the basis of my habilitation thesis. I specialize in the **electrochemical analysis of biologically active compounds**, including **pesticides, pharmaceuticals**, and other **bioactive molecules**, developing **sensitive and selective methods** for their determination in **biological and environmental matrices**, while promoting **environmentally friendly electrode systems**.

In addition to BDDE and graphene-based electrodes, I am actively involved in the development and application of **thin organic film electrodes**, focusing on the **molecular interactions of anticancer drugs with self-assembling biomolecules on membrane surfaces**.

My scientific output includes numerous articles published in **respected international journals**, and I maintain active collaborations with research groups in the **Czech Republic, Austria, Slovakia, Turkey, and Serbia**.

My scientific work combines **electroanalytical chemistry, electrochemistry, and materials science**. I supervise **bachelor's, master's, and PhD students**, and my current research aims to create **efficient, sustainable, and accurate electrochemical methods** for **environmental and biomedical applications**. I am committed to fostering **interdisciplinary approaches** by integrating **analytical chemistry, electrochemistry, and materials science** in the development of **innovative sensing platforms**.

Selected publications

2022 *Electrochemistry as a powerful tool for investigations of antineoplastic agents: A comprehensive review* [\[link\]](#)

2023 *Improved procedure for square-wave voltammetric sensing of fenhexamid residues on blueberries peel surface at the anodically pretreated boron-doped diamond electrode* [\[link\]](#)

2018 *Synthesis and characterization of the thermally reduced graphene oxide in argon atmosphere, and its application to construct graphene paste electrode as a naptalam electrochemical sensor* [\[link\]](#)

Research grants

Principal Investigator: 2 grants: NCN, IDUB

Co-Investigator: 2 grants: ESF under OP Research, Development and Education, NAWA

International research stays

Czechia Prague, Charles University, in the team of Prof. Karolina Schwarzková-Pecková

Austria Graz, University of Graz, in the team of Prof. Kurt Kalcher

Slovakia Bratislava, Slovak University of Technology, in the team of Prof. Ľubomír Švorc