



# Katarzyna Miłowska

ASSOCIATE PROFESSOR – UNIVERSITY OF LODZ

✉ katarzyna.milowska@biol.uni.lodz.pl | 🌐 www.uni.lodz.pl/pracownicy/katarzyna-milowska |

ORCID 0000-0002-4050-2756 | Scopus bibliometric data: citations 1758 · documents 73 · h-index 22

## Currently held positions

Department of General Biophysics, Faculty of Biology and Environmental Protection

University of Lodz

ASSOCIATE PROFESSOR

## Scientific profile and collaborations

My scientific research focuses on investigating **the potential applications of nanoparticles (dendrimers, gold and silver nanoparticles) in medicine**. I am actively involved in the development of new therapeutic strategies, including **the testing of dendrimers as drug and gene delivery vehicles to cancer cells and across the blood-brain barrier**. This research is carried out in collaboration with the University of Alcalá de Henares in Spain.

I also have extensive experience in studying dendrimers for their potential use **as anti-amyloid agents in neurodegenerative diseases**. My second area of interest is the role of modified chitosan, cellulose and alginate films and dendrimers **as factors supporting the wound healing process**. Modified chitosan and cellulose films have antibacterial properties and are biocompatible with blood and skin cells. Some of them accelerate blood clotting and skin cell migration, making them useful in wound healing. I am carrying out this research in collaboration with Prof. Abdelkrim El Kadib at the Université Euromed de Fès in Morocco.

I am also involved in evaluating **the biocompatibility of chitosan and graphene films** as potential food packaging.

As part of a bilateral project funded by the National Agency for Academic Exchange of Poland, I collaborated with the team of Prof. Iveta Waczulikova (Comenius University in Bratislava, Slovakia) and team of Prof. Jean Pierre Majoral (CNRS, France) to test whether new polycationic phosphorus dendrimers based on a cyclotriphosphazene core can support the wound healing process. The collaboration is ongoing.

## Selected publications

- 2025 ***Biocompatibility of phosphorus dendrimers and their antibacterial properties as potential agents for supporting wound healing*** [\[link\]](#)
- 2024 ***Synthesis and biophysical evaluation of carbosilane dendrimers as therapeutic siRNA carriers*** [\[link\]](#)
- 2020 ***Spheroids as a type of three-dimensional cell cultures—examples of methods of preparation and the most important application*** [\[link\]](#)

## Research grants

**Project Manager:** 1 grant: NAWA

**Principal Investigator:** 6 grants: NCN, MNiSW, The European Commission projects

**Co-Investigator:** 8 grants: NCN, NAWA, MNiSW, The European Commission projects

## International research stays

**Slovakia** Bratislava, Comenius University, in the team of Prof. Iveta Waczulikova

**Belarus** Minsk, National Academy of Sciences of Belarus, in the team of Prof. Dzmitry Shcharbin

**Russia** Novosibirsk, Russian Academy of Sciences, in the team of Prof. Alya Venyaminova