

<b>Name and surname</b>	<b>Anna Karczewska</b>
Academic Degree	prof. dr hab. inż. (Prof.)
Institute/Department	Institute of Soil Science, Plant Nutrition and Environmental Protection
e-mail address	anna.karczewska@upwr.edu.pl
ORCID	0000-0003-1457-1368
UPWr Base of Knowledge - link	<a href="https://bazawiedzy.upwr.edu.pl/info.seam?affil=&amp;id=UPWr78599776ae6844018c22307835928c76&amp;lang=en&amp;cid=80621">https://bazawiedzy.upwr.edu.pl/info.seam?affil=&amp;id=UPWr78599776ae6844018c22307835928c76&amp;lang=en&amp;cid=80621</a>
Researchgate	<a href="http://www.researchgate.net/profile/Anna_Karczewska2">www.researchgate.net/profile/Anna_Karczewska2</a>
Personal website / Working group website	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca))	2015-2019: Project NCN 2014/13/B/ST10/02978 : Antimony speciation in soils of selected areas in Lower Silesia, as related to environmental risk – PI; 2017-2020: Project NCN 2016/21/B/ST10/02221: Bioavailability and ecotoxicity of arsenic in heavily contaminated soils in the sites of historical ore mining and processing - as related to environmental risk assessment - PI
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Auxiliary supervisor
Name and surname	Aldona Placzek
Academic Degree	dr inż. (Dr. Eng.)
Faculty, Institute/Department	The Faculty of Life Sciences and Technology, Institute of Soil Science, Plant Nutrition and Environmental Protection
e-mail address	aldona.placzek@upwr.edu.pl
ORCID	0000-0002-2235-9466
UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5)	<a href="https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr560effd97a3a441693a1cc28dc8cdd0d&amp;affil=&amp;lang=en">https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr560effd97a3a441693a1cc28dc8cdd0d&amp;affil=&amp;lang=en</a>
Researchgate	<a href="https://www.researchgate.net/profile/Aldona-Placzek">https://www.researchgate.net/profile/Aldona-Placzek</a>
Personal website / Working group website	
Projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca))	None
<b>PhD topic</b>	<b>Speciation and phytoavailability of selenium in soils: the impact of soil properties and co-occurring elements</b>
Research discipline in Doctoral School	Agriculture and Horticulture
Short description of the research problem to be solved in the PhD (minimum 1000 characters)	Selenium is an essential element for humans and animals. It has not been proved to be essential for plants, but may favor their growth. The soils of many regions of the world, including Poland and other large areas of Europe show a deficit of selenium, therefore it is necessary either to fortify food and fodder with this element, or to apply it as a fertilizer the soil. The latter method may have beneficial effects on soil. The forms of selenium in soils and its uptake from soil by crops are influenced by many factors, including soil properties, in particular the presence of organic matter, and reactions with other elements co-occurring in soils. Due to the very narrow tolerance of Se for humans and animals, the proper prediction of selenium uptake from soil by plants under the conditions of fertilization with this element is a challenging matter in the context of food and fodder quality and possible health risk. The presence of elevated concentrations of some elements in soil, e.g. sulfur, arsenic or some metals, may affect the amounts of Se taken up by plants. The aim of the doctoral study will be the analysis of selenium species in soils with different properties, and examination of its uptake by selected crops (e.g. wheat, maize and grass). The study will be based mainly on incubation tests and pot experiments carried out in a greenhouse. Both unpolluted soils and soils moderately enriched in copper, lead and arsenic, which occur locally in south-western Poland, will be taken into consideration and examined.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters)	Graduation in chemical, biological, agricultural or environmental sciences. Good command of English language in reading, writing and talking. Basic knowledge in the field of soil science (in particular soil chemistry) and plant physiology; experience in work in a chemical laboratory, basic skills in chemical analyses. The ability to use MS Office package, and basic statistical tests. The knowledge of Statistica software, as well as graphical software ( eg. Corel, Photoshop) will be welcome. Experience in carrying out greenhouse experiments would be well appreciated. Inquisitiveness and analytical mind will be necessary.
<b>Details of the project to support PhD research</b>	none
a) Project title	none
b) Agreement number	0
c) Number of months in the project to support PhD (in months; starting from 1st of October 2022)	
d) Project website	