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UPWr Base of Knowledge - link:	<a href="https://bazawiedzy.upwr.edu.pl/info/autor/UPWr9f6b3165ca644198a581291d02c6b36?r=author&amp;tab=&amp;title=Profil%2Bosoby%2B%25E2%2580%2593%2BAgnieszka%2BMedy%25C5%2584ska-Juraszek%2B%25E2%2580%2593%2BUniwersytet%2BPrzyrodniczy%2Bwe%2BWr%25C5%2582awiu&amp;lang=pl">https://bazawiedzy.upwr.edu.pl/info/autor/UPWr9f6b3165ca644198a581291d02c6b36?r=author&amp;tab=&amp;title=Profil%2Bosoby%2B%25E2%2580%2593%2BAgnieszka%2BMedy%25C5%2584ska-Juraszek%2B%25E2%2580%2593%2BUniwersytet%2BPrzyrodniczy%2Bwe%2BWr%25C5%2582awiu&amp;lang=pl</a>
Researchgate:	
Personal website / Working group website:	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	<p>1)FARMWISE: Future Agricultural Resource Management and Water Innovations for a Sustainable Europe. Program Horizon Europe Framework Programme (HORIZON). Call: Clean environment and zero pollution (HORIZON-CL6-2023-ZEROPOLLUTION-01) Duration: 01.01.2024 – 31.12.2027. Role: RF and PI of WP</p> <p>2)SYMBIOREM Symbiotic, circular bioremediation systems and biotechnology solutions for improved environmental, economic and social sustainability in pollution control. Program Horizon Europe Framework. Call: HORIZON-CL6-2021-ZEROPOLLUTION-01. Duration: 01.09.2022-31.08.2025. Role: RF</p> <p>3)Role of microplastics in mobilization/immobilization of metaloestrogens in soils – MISTRZ UPWr project no B100/0006/21. Duration 01.09.2021-31.12.2022. Role: PI</p> <p>4)Biomass reuse as growing medium components for herbal plants production project no MNiSW/2020/334/DIR. Financed by Polish Ministry of Education and Science. Duration 01.01.2021-30.11.2022. Role: PI</p>
PhD topic:	Microplastic role in organic compounds mobilization/immobilization under soil conditions
Research discipline in Doctoral School:	Agriculture and Horticulture
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	<p>Microplastics (MP), defined as plastic particles smaller than 5 mm have recently emerged as contaminants of serious concern to human and ecological health. In marine ecosystems it is well described phenomena that microplastic particles can act as vectors of different endocrine disrupting compounds e.g. phenols and alkylphenols, PFAS, synthetic estrogens, included in the EU priority and watch lists of the Water Framework Directive. The presence of organic compounds in/onto MPs may have two origins. On the one hand, chemicals have been added during the plastic production as additives, such as phthalates, bisphenols and alkylphenols (APs), in order to adapt the plastic properties to their uses. The presence of organic compounds in/onto MPs may have two origins. On the one hand, chemicals have been added during the plastic production as additives in order to adapt the plastic properties to their uses. On the other hand environmental contaminant can be sorbed onto MP surface via chemical interactions. As a general trend, environmental organic compounds show a high affinity for plastics due to their same hydrophobic characteristics. Their sorption capacity also depends on MP characteristics and environmental composition. As soil due to the presence of solid particles e.g. organic matter or clay minerals is much more complicated matrix, the risk related to occurrence of EDCs and MP in soils is much less recognized. Presence of both types of contaminants in soils could potentially threaten the soil health and humans through magnification along the food chain and more attention should be paid to describe mechanisms of sorption/desorption of endocrine disrupting compounds in/onto microplastic in soil and risks related to co-contamination of soil with MPs and EDC. The main analytical tools used in this research will be GC chromatography and analysis of sorption kinetics of EDCs onto different microplastics under soil conditions. The pathways to the organisms, through EDCs sorption onto MPs and potentially adverse effects of this process will be tested in bioassays.</p>
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	<p>Master's degree in Environmental Sciences, Biotechnology or Chemistry. Fluent English in writing and speaking. 100% of publications on the topic is in English. Personal skills: effective oral and written communication, creativity, adaptability, problem – solving, curiosity, ability to analyse data, team working, well organized, ready to work under time pressure. Knowledge of GC chromatography operation, organic compound extraction methods, basics in soil and statistical analysis is desirable.</p>
a) Project title:	None
b) Agreement number:	None
c) Number of months in the project to support PhD student (in months; starting from 1st of October 2024):	0
Project website:	