Name and surname:	**Małgorzata Biniak-Pieróg**
Academic Degree:	dr hab. inż. (DSc.)
Institute/Department:	Department of Environmental Protection and Development
e-mail address:	malgorzata.biniak-pierog@upwr.edu.pl
ORCID:	https://orcid.org/0000-0001-8704-5532
UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info/author/UPWrb580a25228ac4d5e8537bf851ca4a053/Profil%2Bosoby%2B%25E2%2580%2593%2BMa%25C5%2582gorzata%2BBiniak-Pier%25C3%25B3g%2B%25E2%2580%2593%2BUniwersytet%2BPrzyrodniczy%2Bwe%2BWroc%25C5%2582awiu?tab=main&conversationPropagation=begin&sort=&lang=pl&pn=1
Researchgate:	https://www.researchgate.net/profile/Malgorzata_Biniak-Pierog
Personal website / Working group website:	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	2017-2020 - "Technological innovations and system of monitoring, forecasting and planning of irrigation and drainage for precise water management on the scale of drainage/irrigation system (INOMEL)" under the BIOSTRATEG3 program, funded by the Polish National Centre for Research and Development. Contract No. BIOSTRATEG3/347837/11/NCBR/2017 - RF 2020 - present - "Water retention and nutrient recycling in soils and streams for improved agricultural production – WATERAGRI", received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 858375 – RF
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES

	Auxiliary supervisor
Name and surname:	Anna Wyrostek
Academic Degree:	dr inż. (Dr. Eng.)
Faculty, Institute/Department:	Institute of Animal Husbandry and Breeding
e-mail address:	anna.wyrostek@upwr.edu.pl
ORCID:	https://orcid.org/0000-0003-2191-5085
UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5):	https://bazawiedzy.upwr.edu.pl/info/author/UPWr0651c191a31048bd9d80a33b6a28eed4/
Researchgate:	https://www.researchgate.net/profile/Anna-Wyrostek
Personal website / Working group website:	
Projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	2021- present - "Innovative methods of breeding and rearing sheep in accordance to changing climatic conditions of Lower Silesia". Implemented under "Cooperation" of the Rural Development Programme 2014-2020. An operation co-financed by the European Agricultural Fund for Rural Development - RF
PhD topic:	Water retention in soil amended with natural fiber
Research discipline in Doctoral School:	Environmental Engineering, Mining and Energy
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	In the view of the projected climate changing resulting in the decreasing water resources, the proposed topic of assessing the impact of using natural fibers added to soil on the formation of soil retention and the effectiveness of precipitation in supplying water to the soil profile is very timely. Natural fibers of animal origin, especially sheep wool is a raw material characterized by hygroscopic properties. This means that they are able to absorb and retain water inside. A single wool fibre may absorb ca. 30% of water in relation to its mass, and a group of fibres may absorb up to ca. 40% of water. The water-absorbing abilities of wool fibers may find applications in maintaining water in soils. The work will be implemented by conducting a field experiment at the Agro and Hydrometeorology Observatory belonging to Research and Training Station – Swojczyce, Wrocław University of Environmental and Life Sciences. This experiment will include soil moisture monitoring with variability of natural wool fibers added to soil and agro- and hydrometeorological elements. However, fibers, due to their main component, which is the protein-keratin, may partially decompose in the soil, thus losing their properties. It will therefore be an important issue to determine after what time the wool, depending on its type and the degree of preparation, will decompose and remain without affecting soil water retention.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	The candidate should be a graduate of environmental engineering or related fields of study, fluent in English, proficient in Office 365 programs, statistical data analysis programs, as well as data visualization programs. The candidate should have the ability to process and interpret data obtained from experimental studies and process them statistically. Documented scientific achievements will be highly appreciated. The candidate should be a creative, out-of-box-thinking person with the ability to work in a team, ready to take on new challenge, and oriented towards achieving set goals. Hands-on experience with field experiments will be advantage.
a) Project title:	
b) Agreement number:	
c) Number of months in the project to support PhD (in months; starting from 1st of October 2022):	
Project website:	