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Academic Degree:	prof. dr hab. inż. (Prof.)
Institute/Department:	Department of Applied Bioeconomy
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ORCID:	0000-0002-5871-2129
UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info/author/UPWr903a39c81e8e493eb3646a16ed2782f5/Person%2Bprofile%2B%25E2%2580%2593%2BAndrzej%2BBia%25C5%2582owiec%2B%25E2%2580%2593%2BWroc%25C5%2582aw%2BUniversity%2Bof%2BEnvironmental%2Band%2BLife%2BSciences?r=author&tab=&lang=en
Researchgate:	https://www.researchgate.net/profile/Andrzej-Bialowiec
Personal website / Working group website:	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	1. The research on the microbial mechanism of enhancing the biomethane production from biowaste by typical carbon materials. NCN. Opus 22. 2022-2025. PI 2. Studies on the release of volatile organic compounds from carbonised solid fuel produced from municipal waste. NCN. Preludium Bis2. 2021-2025. PI 3. Study of the influence of pyrolysis technological parameters and substrate properties on the release of volatile organic compounds from biocarbon. NCN. Preludium Bis. 2020-2024. PI.
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Auxiliary supervisor
Name and surname:	Agata Siedlecka
Academic Degree:	dr inż. (Dr. Eng.)
Faculty, Institute/Department:	Department of Applied Bioeconomy
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ORCID:	0000-0002-5027-4670
UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5):	https://doi.org/10.1007/s41742-022-00438-1 ; https://doi.org/10.1016/j.scitotenv.2021.145113 ; https://doi.org/10.33073/pjm-2021-004 ; https://doi.org/10.37190/epe180406
Researchgate:	https://www.researchgate.net/profile/Agata-Siedlecka?iepl%5BgeneralViewId%5D=Nq9oUhaNSwDip0QyVKJeLYSRMEVCPmCiKA0W&iepl%5Bcontexts%5D%5B0%5D=searchReact&iepl%5BviewId%5D=jQTtIWckiCnVC7q1mbiH7aV09f1id6hsTL&iepl%5BsearchType%5D=publication&iepl%5Bdata%5D%5BcountLessEqual20%5D=1&iepl%5Bdata%5D%5BinteractedWithPosition2%5D=1&iepl%5Bdata%5D%5BwithoutEnrichment%5D=1&iepl%5Bposition%5D=2&iepl%5BBrqKey%5D=PB%3A350171953&iepl%5BtargetEntityId%5D=PB%3A350171953&iepl%5BinteractionType%5D=publicationViewCoAuthorProfile
Personal website / Working group website:	
Projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	1. SNIT - Shortcut nitrification in activated sludge process treating domestic wastewater - key technology for low-carbon and clean wastewater treatment. RF
PhD topic:	The prevalence of antimicrobial resistance in waste processing system
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):	According to WHO, antimicrobial resistance (AMR) has become a problem posing a serious threat to human health and life all over the world. Importantly, not only clinically relevant strains or well-known pathogens, but also potentially harmless, saprophytic environmental bacteria are nowadays known to disseminate resistance against antimicrobial agents. Therefore, the occurrence of AMR in natural and artificial environments is gaining increasing scientific attention. Although wastewater treatment plants are commonly known as reservoirs and hot spots of resistance dissemination, no less emphasis should be placed on solid waste processing systems. Antibiotic-resistant bacteria (ARB) and antibiotic resistance genes (ARGs) could be transferred to the environment with fertilizers obtained in, e.g., composting and anaerobic digestion processes. The aim of the project will be to investigate the occurrence and fate of ARB, ARGs, and residual antibiotics in various waste processing systems, as well as produced fertilizers or other final products. Additionally, the evaluation of their influence on natural (background) AMR in the soil environment should be performed. The results will contribute to a better understanding of potential ways of AMR dissemination and resulting health risks.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	The candidate should be familiar with environmental microbiology, environmental engineering, or biotechnology, especially the methods of bacteria cultivation, purification, and identification. The ability to work in sterile conditions is required. Knowledge of susceptibility testing will be an advantage. Moreover, the candidate is required to have basic knowledge of the extraction of nucleic acids from environmental samples and qPCR or dPCR techniques. The ability to analyze next-generation sequencing data will be a significant 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:	