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Institute/Department:	Institute of Environmental Engineering
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UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info/author/UPWrd66ea4caf32645989ce400bf2981f03b/Profil+osoby+%25E2%2580%2593+Krzysztof+Lejcu%25C5%259B+%25E2%2580%2593+Uniwersytet+Przyrodniczy+we+Wroc%25C5%2582awiu?r=author&ps=20&tab=&lang=en&pn=1&cid=246700
Researchgate:	https://www.researchgate.net/profile/Krzysztof-Lejcus
Personal website / Working group website:	https://wiksig.upwr.edu.pl/en/faculty/structure/institute-of-environmental-engineering
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	1. 2022 - 2026. Symbiotic, circular bioremediation systems and biotechnology solutions for improved environmental, economic and social sustainability in pollution control. Horizon Europe. Task leader. 2. 2017-2021. "Hydrobox2.0 - an innovative technology supporting water saving and plant vegetation". Measure 4.1 "Research and development work", Sub-measure 4.1.4 "Application projects" Project no. POIR.04.01.04-00-0061. Project manager. http://hb2.upwr.edu.pl/ 3. 2020 - present Project manager on the part of UPWr in the project "Adaptation and implementation of an innovative water treatment technology in a closed irrigation system with the use of biological protection agents and biostimulators on the example of large-fruited cranberry". Rural Development Program 2014 - 2020, Measure "Cooperation" "Supporting innovation, cooperation and development of the knowledge base in rural areas." https://ec.europa.eu/eip/agriculture/en/find-connect/projects/dostosowanie-i-wdro%C5%BCenie-innowacyjnatechnologii 4. 2021 - Contractor in the project "Innovation Incubator 4.0" - a program of the Minister of Education and Science implemented by the European Regional Development Fund under the non-competitive project entitled "Support for the management of scientific research and commercialization of R&D results in research units and enterprises". Measure 4.4 Intelligent Development Operational Program 2014-2020. 5. 2020 - 2022. The contractor in the project "Innovative technology for the production of plug plant and long cane berry seedlings with a high productivity factor on the example of raspberry and thornless blackberry" (contract No. 00032.DDD.6509.00013.2019.07), under Measure 16 "Cooperation" of the Rural Development Program 2014-2020 ". 6. 2019. Member of the Program Council. BioSciUniversity. "Strategy of Excellence - Research University", UPWr. 7. 2009-2014. Coordinator of the project "Water-absorbing geocomposites - innovative technologies supporting plant vegetation (GEOSAP)", European Regional Development Funds under the Operational Program Innovative Economy 2007-2013. www.geosap.up.wroc.pl
PhD topic:	Sustainable water purification filters
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):	The ongoing changes in the environment, including climate change affecting all humanity, require the development of new methods to limit their effects. One of the main problems is water pollution. Therefore, work is planned to develop a sustainable method of water purification using waste plant and animal materials and other materials of natural origin. The technology developed in this way will fit into the assumptions of the circular economy. Filters will be developed in the form of composites that retain pollutants. The area of application of the new technology may concern fresh waters, e.g. streams or rainwater. Since natural materials are expected to be used in the construction of composites, it will be possible to further use them, e.g. as a soil additive supporting plant vegetation. In this case we not only close the loop but also increase fresh and dry biomass of plants. It i also possible to convert the geocomposite into biochar will be used as a soil additives. Preliminary tests certifying the possibility of creating filters in the form of composites of competitors with natural materials, including waste ones.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	Education in environmental engineering/protection or related. Knowledge in the field of filtration purification technologies or water/soil chemistry. Laboratory analysis experience. Field research expierience expacted. Participates in validation and other performance testing, including set-up, operation, and data collection. Knowledge of English at a minimum level of B2 or appropriate. High self-discipline, willingness to work both individually and in a team. An additional advantage will be having at least one scientific article with an IF indicator or students activity.
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:	