Name and surname:	**Zbigniew Lazar**
Academic Degree:	prof. dr hab. inż. (Prof.)
Institute/Department:	Department of Biotechnology and Food Microbiology
e-mail address:	zbigniew.lazar@upwr.edu.pl
ORCID:	0000-0001-7315-1983
UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info/author/UPWrb66e319982544adb95168459bd28c6e9/Profil+osoby+%25E2%2580%2593+Zbigniew+Lazar+%25E2%2580%2593+Uniwersytet+Przyrodniczy+we+Wroc%25C5%2582awiu?ps=20&lang=pl&pn=1&cid=451294
Researchgate:	https://www.researchgate.net/profile/Zbigniew-Lazar
Personal website / Working group website:	https://upwr.edu.pl/badania/wiodace-zespoly-badawcze/biotechnologia-dla-zycia-i-przemyslu-biotechlife
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	Preludium Bis 4 - 2023-2027 - Drożdże z kladu Yarrowia — nowa wydajna platforma do jednoczesnej biosyntezy lipidów i zewnątrzkomórkowych białek heterologicznych - kierownik projektu SYMBIOREM - Symbiotic, circular bioremediation systems and biotechnology solutions for improved environmental, economic and social sustainability in pollution control - wykonawca OPUS19 - 2021-2024 - Wykorzystanie lotnych kwasów tłuszczowych do biosyntezy wosków przez drożdże Yarrowia lipolytica - kierownik projektu OPUS19 - 2021-2024 - Potencjał biotechnologiczny oraz aktywność przeciwdrobnoustrojowa nowych koniugatów biosurfaktant-lipaza immobilizowanych na powierzchni biopolimerów - wykonawca POIR - 2019-2021 - Opracowanie innowacyjnej technologii produkcji suplementów diety na bazie kwasu alfa-ketoglutarowego pozyskiwanego na drodze biologicznej z udziałem drożdży Yarrowia lipolytica - wykonawca
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Auxiliary supervisor
Name and surname:	Anna Kancelista
Academic Degree:	dr inż. (Dr. Eng.)
Faculty, Institute/Department:	Department of Biotechnology and Food Microbiology
e-mail address:	anna.kancelista@upwr.edu.pl
ORCID:	0000-0003-0768-6095
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.seam?id=UPWr700bc5b6c83245a5b27252f9ae42aefe
Researchgate:	https://www.researchgate.net/profile/Anna-Kancelista
Personal website / Working group website:	https://upwr.edu.pl/badania/wiodace-zespoly-badawcze/biotechnologia-dla-zycia-i-przemyslu-biotechlife
Projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	SYMBIOREM - Symbiotic, circular bioremediation systems and biotechnology solutions for improved environmental, economic and social sustainability in pollution control - wykonawca OPUS19 - 2021-2024 - Wykorzystanie lotnych kwasów tłuszczowych do biosyntezy wosków przez drożdże Yarrowia lipolytica - kierownik projektu OPUS19 - 2021-2024 - Potencjał biotechnologiczny oraz aktywność przeciwdrobnoustrojowa nowych koniugatów biosurfaktant-lipaza immobilizowanych na powierzchni biopolimerów - wykonawca 2021 - 2022 - Program Studenckie koła naukowe tworzą innowacje, SKN Biotechnologów w poszukiwaniu nowych ekstremozymów, MNiSW 2019 - 2020 - Miniatura 3, Ocena potencjału nowych szczepów grzybów strzępkowych w procesie biosyntezy psychrozymów, NCN
PhD topic:	Development of new microbiological preparations useful in bioremediation processes

Research discipline in Doctoral School:	Biotechnology
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	Bioremetiation is an environmentally friendly method for environmental cleanup that utilizes living organisms to remove or neutralize pollutants. It is widely applied to areas contaminated by industrial activities, chemical accidents, and other sources of pollution, restoring ecosystems to their natural state. The effectiveness of bioremediation depends on the type of pollutant, the organisms used, and environmental conditions. It can be used to eliminate various substances, including hydrocarbons, pesticides, heavy metals, and radioactive materials. Bioremediation is currently gaining popularity due to the need for sustainable development-based technologies, its efficiency, and lower costs compared to traditional cleanup methods. Increasing knowledge about microorganisms and their metabolism allows for the designing more effective bioremediation strategies, while genetic engineering methods enable the construction of strains with improved properties for pollutant degradation. The rising number of environmental threats, such as oil spills and heavy metal contamination, amplifies the need for effective cleanup methods in which bioremediation can be highly beneficial. Additionally, bioremediation is seen as a socially acceptable method due to its less invasive nature and more natural approach to environmental cleanup. Based on the above information, the main objective of the proposed doctoral thesis will be to develop a bank of microorganisms with high capabilities for removing specific types of pollutants, such as radioactive substances, hydrocarbons, heavy metals, etc. The microorganisms in this bank will vary in physiological properties. Additionally, the goal will be to create preparations based on mixtures of these microorganisms that will be used for the effective removal of the mentioned types of pollutants.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	A candidate for a PhD in the project should have completed studies in biotechnology or a related field. The required criterion for working in the project is very good knowledge of microbiological techniques, including: isolation of microorganisms into pure cultures, cultivation methods and microorganism characterisation. In addition, knowledge of basic molecular biology techniques, such as DNA isolation, PCR and electrophoretic techniques, will be required. The ability to operate chromatographs - liquid and gas - will be an additional advantage.
a) Project title:	none
b) Agreement number:	0
c) Number of months in the project to support PhD student (in months; starting from 1st of October 2024):	0
Project website:	