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Academic Degree:	dr hab. (DSc.)
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UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr0965c0ec1ea40a98e518ee82f62ee98&affil=&lang=pl
Researchgate:	https://www.researchgate.net/profile/Adam-Dobrowolski
Personal website / Working group website:	none
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	<p>PI:</p> <ol style="list-style-type: none"> 2024- 2028, Study on physiology of <i>Yarrowia lipolytica</i> yeast to use lignocellulosic biomass as a carbon source for lipid biosynthesis, OPUS 26, NCN, PI 2018-2024, Study on influence of alternative carbon sources on lipids biosynthesis in yeast <i>Yarrowia lipolytica</i>, Naional Science Center, Sonata Bis, PI 2013-2016, Improving the process of microbial oil biosynthesis by <i>Yarrowia lipolytica</i> yeast from waste raw materials, luventus Plus, MNiSW <p>RF:</p> <ol style="list-style-type: none"> 2019-2024, Molecular mechanism of polyol assimilation in the yeast <i>Yarrowia lipolytica</i> OPUS16, NCN, RF 2018-2023, Study of the physiological capacity of the yeast <i>Yarrowia lipolytica</i> to degrade plastics OPUS14, NCN, RF 2019-2023, COST Action: Yeast4Bio (Non-Conventional Yeasts for the Production of Bioproducts) Action N° CA18229, UE, RF
PhD topic:	Study on physiology of <i>Yarrowia lipolytica</i> yeast to use lignocellulosic biomass as a carbon source for lipid biosynthesis
Research discipline in Doctoral School:	Biological Sciences
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	<p>Permanently increasing demand for fossil fuels results in visions of depletion of this feedstocks. The 2nd generation biofuels (bioethanol) are produced from lignocellulosic biomass as a carbon-neutral, cheap and versatile source of carbon. The production of biodiesel from microbial lipids (SCO) derived from renewable lignocellulosic biomass is considered a promising strategy to promote green energy and sustainability policy. The yeast <i>Yarrowia lipolytica</i> is such an oleaginous organism. The physiology of yeast utilisation of sugars present in lignocellulosic biomass hydrolysates needs to be studied for efficient application. To use of SCO for biodiesel production from lignocellulosic biomass hydrolysate, the metabolic engineering of yeast, combined with adaptive laboratory evolution should be employed. The aim of the study is to determine, describe and understand the main points in the physiological (metabolic) network of the non-conventional yeast <i>Yarrowia lipolytica</i> cells that allow growth and lipid biosynthesis on hydrolysates obtained from lignocellulosic biomass.</p>
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	<ul style="list-style-type: none"> - Master's degree in: biotechnology, biology, microbiology (or related) - Knowledge of techniques for working with microorganisms (cultivation, transformation, work with a microscope) - Knowledge of molecular biology techniques (DNA isolation, PCR, qPCR, cloning, etc.) - Fluent in English, both written and spoken - The PhD candisate should demonstrate initiative and the ability to work independently. He should be able to identify research challenges and propose innovative solutions. - Enthusiasm and commitment to scientific work - Ability to work in a team
a) Project title:	Study on physiology of <i>Yarrowia lipolytica</i> yeast to use lignocellulosic biomass as a carbon source for lipid biosynthesis
b) Agreement number:	UMO-2023/51/B/NZ9/01872
c) Number of months in the project to support PhD student (in months; starting from 1st of October 2024):	48
Project website:	