Name and surname:	**Filip Boratyński**
Academic Degree:	dr hab. inż. (DSc.)
Institute/Department:	Department of Food Chemistry and Biocatalysis
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UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr87f8e85cba4849a084d427972c2a675d&affil=&lang=pl
Researchgate:	https://www.researchgate.net/profile/Filip-Boratynski
Personal website / Working group website:	https://upwr.edu.pl/en/research/leading-research-group/biocatalysis-and-biological-activity-bioactiv
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	1. Research project "Unlocking Bioactivity of Forest Plants Associated Mycobiome as Sources of Novel Carotenoids and other BioPigments: Intensifying their Potential using Nanotechnology", National Centre of Science (NCN), POLONEZ BIS 1 programme, 2021/43/P/NZ9/02241, 2022 – 2024 (project mentor). 2. Research project „Development of efficient and sustainable enzymatic methods for the oxidative cleavage of alkenes", NAWA, Bekkera programme, PPN/BEK/2018/1/00181, 2019 – 2020, (PI, project manager)
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Auxiliary supervisor
Name and surname:	El Sayed Ramadan El Sayed Ali
Academic Degree:	dr (Dr.)
Faculty, Institute/Department:	1. Department of Food Chemistry and Biocatalysis (UPWr) 2. Plant Research Department, Nuclear Research Centre, Egyptian Atomic Energy Authority, Egypt
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ORCID:	0000-0001-7867-3801
UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5):	1. El-Sayed ER, Gach J, Olejniczak T, Boratyński F (2022) A new endophyte Monascus ruber SRZ112 as an efficient production platform of natural pigments using agro-industrial wastes. Scientific Reports. https://doi.org/10.1038/s41598-022-16269-1; 2. El-Sayed ER, Mousa SA, Mahmoud SR, Abo El-Seoud MA, Elmehalawy AA, Abdou DAM (2022). Exploiting the Exceptional Biosynthetic Potency of the Endophytic Aspergillus terreus in Enhancing Production of Co3O4, CuO, Fe3O4, NiO, and ZnO Nanoparticles Using Bioprocess Optimization and Gamma Irradiation. Saudi Journal of Biological Sciences. https://doi.org/10.1016/j.sjbs.2021.12.019; 3. El-Sayed ER, Zaki AG, Ahmed AS, Ismaiel AA (2020) Production of the anticancer drug taxol by the endophytic fungus Epicoccum nigrum TXB502: enhanced production by gamma irradiation mutagenesis and immobilization technique. Applied Microbiology and Biotechnology. https://doi.org/10.1007/s00235-020-10712-x; 4. Zaki AG, El-Sayed ER, Abd Elkodous M, El-Sayyad GS (2020) Microbial acetylcholinesterase inhibitors for Alzheimer's therapy: recent trends on extraction, detection, irradiation-assisted production improvement and nano-structured drug delivery. Applied Microbiology and Biotechnology. https://doi.org/10.1007/s00253-020-10560-9; 5. Mousa SA, El-Sayed ER, Mahmoud SR, Abo El-Seoud MA, Elmehalawy AA, Abdou DAM (2021) Novel mycosynthesis of Co3O4, CuO, Fe3O4, NiO, and ZnO nanoparticles by the endophytic Aspergillus terreus and evaluation of their antioxidant and antimicrobial activities. Applied Microbiology and Biotechnology. https://doi.org/10.1007/s00253-020- 11046-4
Researchgate:	https://www.researchgate.net/profile/El-Sayed-El-Sayed-3
Personal website / Working group website:	https://bioexplor.eu/index.php/services/
Projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	1. Research project "Unlocking Bioactivity of Forest Plants Associated Mycobiome as Sources of Novel Carotenoids and other BioPigments: Intensifying their Potential using Nanotechnology", National Centre of Science (NCN), POLONEZ BIS 1 programme, 2021/43/P/NZ9/02241, 11.2022 – 10.2024 (PI, project manager).
PhD topic:	Exploiting agro-industrial side-streams in production of flavour compounds using biotransformation mediated endophytic fungi
Research discipline in Doctoral School:	Biological Sciences
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	To date, several industrial sectors of natural flavor compounds are gaining strength over time due to the growing interest of consumers for natural products, as a safer and greener alternative for synthetic ones to reduce their health risks. Despite that, several natural flavors could be obtained from the nature, the high cost of their extraction and processing limits their availability. Thus, this thesis aims to develop a cost-effective production process of some flavor compounds such as piperonal, vanillin, anisaldehyde, veratric aldehyde and others. The work plan involves isolation and screening of endophytes for their flavour compounds producing ability. Then, developing a cost-effective fermentation for production by studying the most favourable fermentation conditions for maximum production rates. Furthermore, this project aims for the first time to explore the effectiveness of using agro-industrial side streams as low-cost substrates in biotransformation of certain flavours, thereby problems of safe disposal and pollution avoidance to the environment will be solved as well. Exploiting food by-products and wastes are gaining public attention for their application as an excellent media for fungi to metabolize available nutrients in order to produce various enzymes. In particular, the employment of endophytic fungi as enzymatic sources to biotransformation reactions is very promising since these microorganisms came from uncommon and underexplored habitat and some studies have shown endophytes to be good producers of useful enzymes to improve industrial processes.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	Professional skills of PhD candidate: 1. Experience in cultivation of microorganisms. 2. Familiarity of different extraction techniques. 3. Determination of compounds by chromatographic techniques. 4. MSc in Agricultural or Biological sciences. 5. Publication of at least 1 research paper in a JCR indexed journal. 6. English skills at the level min. B1. ----------
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:	