Name and surname:	**Sebastian Opaliński**
Academic Degree:	dr hab. inż. (DSc.)
Institute/Department:	Department of Environmental Hygiene and Animal Welfare
e-mail address:	sebastian.opalinski@upwr.edu.pl
ORCID:	0000-0003-3669-5994
UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr042d8442ed8e494f97809881607fa68f
Researchgate:	https://www.researchgate.net/profile/Sebastian-Opalinski
Personal website / Working group website:	https://upwr.edu.pl/en/research/leading-research-group/animal-science-for-future-asc4future
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	LivestockSense, "Enhancing environmental sustainability of livestock farms by removing barriers for adoption of ICT technologies", funded by the National Centre for Research and Development (NCBR), agreement no. ICTAGRIFOOD/I/LIVESTOCKSENSE/01/21, within the European Union's Horizon 2020 research and innovation programme under grant agreement No 862665 ERA-NET ICT-AGRI-FOOD. PI
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Second supervisor (from other discipline, Polish or international research unit)
Name and surname:	Andrzej Białowiec
Academic Degree:	prof. dr hab. inż. (Prof.)
Faculty, Institute/Department:	Department of Applied Bioeconomy
e-mail address:	andrzej.bialowiec@upwr.edu.pl
ORCID:	https://orcid.org/0000-0002-5871-2129
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=UPWr903a39c81e8e493eb3646a16ed2782f5&affil=&lang=pl
Researchgate:	https://www.researchgate.net/profile/Andrzej-Bialowiec
Personal website / Working group website:	https://upwr.edu.pl/en/research/leading-research-group/waste-and-biomass-valorization-group-wbvg
Participation projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	PRELUDIUM BIS, Study of the influence of pyrolysis technological parameters and substrate properties on the release of volatile organic compounds from biocarbon, NCN, 2020-2024, PI; PRELUDIUM BIS, Studies on the release of volatile organic compounds from carbonised solid fuel produced from municipal waste, NCN, 2021-2025, PI; OPUS-22, The research on the microbial mechanism of enhancing the biomethane production from biowaste by typical carbon materials, NCN, 2022-2025, PI;
PhD topic:	Biochar in the diet of laying hens and the structure and physicochemical properties of eggs
Research discipline in Doctoral School:	Animal Science and Fisheries
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	Livestock diet supplementation with biochar has been known for some time, but there is still a lack of information on the molecular mechanism of biochar action on livestock, particularly poultry. There are many biochars on the market with different properties, however, in animal nutrition, it is allowed to use only products obtained by carbonisation of organic vegetal material, so-called vegetal carbon (Commission Regulation (EU) No 68/2013). One of the essential features of biochar (BC) is its specific surface area, thanks to which it can modify many processes. The research carried out so far has shown that BC as a feed additive can improve eggshell resistance to crushing and eggshell thickness, which are critical parameters in poultry production. However, the mechanism of biochar influence, both qualitative (surface area) and quantitative (dose), on the eggshell quality (structure and resistance) is still unknown. Therefore, the aim and novelty of the proposed research will be to find correlations between novel functionalised biochar and mechanically resistant eggshell and learn about the mechanism that led to it.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	Higher education in animal science. Interest in scientific work, the ability to work independently and in a group, and communication skills. Necessary skills in planning experiments, data analysis and writing scientific publications. Computer skills in the MS Office environment and the statistical package. Participation in conferences and scientific publications on the issues of livestock farming and breeding. Knowledge of English at the C1 level. The candidate should be ready to complete the min. 4-month internship at a foreign research centre dealing with precision livestock farming methods.
a) Project title:	none
b) Agreement number:	none
c) Number of months in the project to support PhD (in months; starting from 1st of October 2022):	
Project website:	