

Name and surname:	Anna Zimoch-Korzycka
Academic Degree:	dr hab. inż. (DSc.)
Institute/Department:	Department of Functional Food Product Development
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UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info.seam?affil=&ps=20&id=UPWra6a6925f0f3f42788cbf177928b64eb3&lang=en&pn=1&cid=53435
Researchgate:	
Personal website / Working group website:	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	<p>1. Project title: Possibilities of shaping the physico-chemical properties of meat analogues using transglutaminase Project number: N090/0008/23 N090/0008/23 Authority granting funds for the project implementation: UPWr SCIENTIFIC RESEARCH SUPPORT FUND - PATH IV (N090/23) From 2023 to 2024. PI</p> <p>2. Project title: "Assessment of the quality of cold meats produced according to standard technology and development of the recipe composition of biopolymer hydrosols for the industrial production of edible protective coatings" Project number: POIR.01.01.01-00-2223/20, Body granting funds for the project: Funds European - Smart Growth Program From 2021 to 2023. PI</p> <p>3. Project title: Development of an innovative product in the form of an anti-stress feed additive based on Cannabis sativa L. Project number: B090/0071/20 Authority granting funds for the project: POIR.02.03.02-06-0061/19-00 From 2020 to 2022. RF</p>
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Auxiliary supervisor
Name and surname:	Łukasz Bobak
Academic Degree:	dr inż. (Dr. Eng.)
Faculty, Institute/Department:	Faculty of Biotechnology and Food Science, Department of Functional Food Product Development
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UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5):	<p>1.Importance for humans of recently discovered protein compounds – Yolkin and Yolk Glycopeptide, present in the plasma of hen egg yolk Zambrowicz Aleksandra, Zablocka Agnieszka, Bednarz Dominika [i in.], Poultry Science, 2023, vol. 102, nr 7, s.1-10, Numer artykułu:102770. DOI:10.1016/j.psj.2023.102770 2.Effect of Chemical Degradation of Sodium Alginate on Capsaicin Encapsulation Kulig Dominika, Bobak Łukasz, Jarmoluk Andrzej [i in.], Molecules, 2023, vol. 28, nr 23, s.1-14, Numer artykułu:7844. DOI:10.3390/molecules28237844 3.Functional Properties of Chitosan Oligomers Obtained by Enzymatic Hydrolysis Kulig Dominika, Król-Kilińska Żaneta, Bobak Łukasz [i in.], Polymers, 2023, vol. 15, nr 18, s.1-17, Numer artykułu:3801. DOI:10.3390/polym15183801 4.Conventional water bath heating on undried brewer's spent grain: Functionality, fatty acids, volatiles, polyphenolic and antioxidant properties Naibaho Joncer, Pudło Anna, Bobak Łukasz [i in.], Food Bioscience, 2023, vol. 53, s.1-9, Numer artykułu:102523. DOI:10.1016/j.fbio.2023.102523 5.Chemical compositions, antioxidant activities and techno-functionality of spent grain treated by autoclave treatment: evaluation of water and temperature levels Naibaho Joncer, Bobak Łukasz, Pudło Anna [i in.], International Journal of Food Science and Technology, 2023, vol. 58, nr 4, s.2130-2140. DOI:10.1111/ijfs.16042</p>
Researchgate:	
Personal website / Working group website:	
Projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	<p>1. Optimization of the extraction and fractionation process of eggshell membranes using the response surface method (RSM) [N090/0010/23] PI From 05.2023 to 12.2024</p> <p>2. Project title: "Assessment of the quality of cold meats produced according to standard technology and development of the recipe composition of biopolymer hydrosols for the industrial production of edible protective coatings" Project number: POIR.01.01.01-00-2223/20, Body granting funds for the project: Funds European - Smart Growth Program RF From 2021 to 2023.</p> <p>3. Formulation development of plant extracts with pharmaceutical and food potential MOZART XII BWU-2/2023/M12 PI From 10.2023 to 09.2024.</p>
PhD topic:	The use of alternative protein sources in the design of novel food
Research discipline in Doctoral School:	Nutrition and Food Technology

<p>Short description of the research problem to be solved in the PhD (minimum 1000 characters):</p>	<p>Recommendations related to sustainable development: reduce water consumption or greenhouse gas emissions are assessed through the production of animal protein. Due to the continuous increase in the population and limited access to food resources, there is a need to look for alternative protein sources.</p> <p>Alternative proteins are non-meat proteins obtained from various sources such as plants, insects, and fungi. Current alternative proteins are divided into five sections: beyond meat (plant-based meat – plant ingredients mixed to create a beef patty form), impossible meat (plant-based meat – extracting proteins from plants and creating a product from the protein molecules), Memphis meat (exploring range of meats, initially focus on chicken – cellular based), new wave (shrimp alternative – extracting the protein from plants e.g. algae and creating a product from the protein molecules), insect flour (ingredients to be added to other foods e.g. cakes, bars, medical nutrition). The subject of the Ph.D. thesis is the selection of proteins in terms of specific possibilities of their modification.</p> <p>There are a few applications of protein texturizing techniques in order to produce meat analogues or meat substitutes. Forming an anisotropic structure that has similar textural properties is the biggest challenge. Among the advanced and novel technologies, extrusion, shear-structuring, 3D printing, electrospinning, and freeze-structuring are used. There is also a need to use functional ingredients, e.g., binding/viscoelastic agents and crosslinkers.</p> <p>The purpose of the research is to use alternative protein sources to design new food products with the characteristics of functional food. Proteins and/ or their prepartates are going to be tested for protein content, amino acid content, protein digestibility, functional and rheology properties.</p> <p>It is expected to obtain new food products with a high protein content in form of gel, emulsion, texturized and dried with a similar or higher protein content as their meat counterparts. Protein gels, emulsions, texturized and dried forms are going to be implemented in food and analyzed microbiologically, sensorially, and storage.</p>
<p>Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):</p>	<p>The candidate is expected to have:</p> <ul style="list-style-type: none"> - an academic title of Master in food, biological, biotechnology, chemistry sciences, - a large commitment to do research, - basic laboratory skills, - analytical techniques: polymer modification methods, antioxidant properties, antimicrobial propoerties, chemical structure and characteristic of polymers, - a good English skills (at the minimum B2 level), - readiness to do foreign internships and experience in laboratory work. It is desirable that the candidate has: - experience/knowledge in working with polymers and or bioactive substances, - ability in working with MS Office (Excel, Word), Statistica or another similar programmes.
<p>a) Project title:</p>	<p>none</p>
<p>b) Agreement number:</p>	<p>none</p>
<p>c) Number of months in the project to support PhD student (in months; starting from 1st of October 2024):</p>	<p>0</p>
<p>Project website:</p>	