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| Name and surname | Anna Zimoch-Korzycka |
| Academic Degree | dr hab. inż. (DSc.) |
| Institute/Department | Department of Functional Food Product Development |
| e-mail address | anna.zimoch-korzycka@upwr.edu.pl |
| ORCID | https://orcid.org/0000-0002-4468-1018 |
| UPWr Base of Knowledge - link | https://bazawiedzy.upwr.edu.pl/info.seam?affil=&id=UPWraba6925f0f3f42788cb177928b64eb3&lang=pl&cid=1164641 |
| Researchgate | https://www.researchgate.net/profile/Anna-Zimoch-Korzycka |
| Personal website / Working group website | |
| Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)) | Development of a technology for the production of meat products with an increased standard of quality and safety of consumer health 2021-2023. Polish Agency for Enterprise Development, project number: POIR.01.01.01-00-2223 / 20; PI |
| 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 | Department of Functional Food Products Development |
| e-mail address | lukasz.bobak@upwr.edu.pl |
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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) | https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr964032e1354444119b66d340dba501bd&affil=&lang=pl |
| Researchgate | https://www.researchgate.net/profile/Lukasz-Bobak |
| Personal website / Working group website | |
| Projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)) | Development of the prescription composition of the dressing in the form of a hydrogel with the use of biologically active substances isolated from egg raw material, including lysozyme and its oligomeric forms, along with verification of its biocidal properties against pathogens colonizing difficult-to-heal wounds, including diabetic foot. WOI.NI.4211.UK.2 / 1-T / 2018 01 January 2018 - 31 March 2018 (3 months); PI Development of an innovative product in the form of an anti-stress feed additive based on Cannabis sativa L. WOI.NI.4211.UK.61 / TZZ / 2019 2019-2021; PI |
| PhD topic | MULTICOMPONENT BIOPOLYMER COLLOIDAL SYSTEMS AS DETERMINANTS OF FUNCTIONAL FOOD QUALITY |
| Research discipline in Doctoral School | Nutrition and Food Technology |
| Short description of the research problem to be solved in the PhD (minimum 1000 characters) | In food products, colloidal systems in the form of emulsions, foams, gels or other forms of dispersion are usually formed during processing. Edible colloidal systems are multicomponent mixtures usually containing lipids and / or proteins and / or polysaccharides and / or vitamins and / or enzymes and / or minerals in the aqueous phase. Many of these substances carry a significant bioactive potential, but their availability and the possibility of having a beneficial effect on human well-being and health may be limited. Due to their thickening, gelling, emulsifying and stabilizing properties, biopolymers contained in food colloids determine the quality of food, especially its sensory parameters and storage stability. Colloidal systems arise as a result of vigorous mixing/ disintegration causing dispersing/ suspending some of the insoluble components in the continuous phase of the mixture, leading to the formation of dispersion. There are many forms of colloidal systems and their functional characteristics depends on the type, form, amount and proportion of the components to be combined / integrated with each other. Protein-polysaccharide-lipid interactions could play a key role in nano-scale engineering of novel functional foods designed to address common health problems related to obesity and the release of specific nutrients. Currently, intelligent manipulation of protein/ polysaccharide/ lipid interactions and their modifications as well as selecting appropriate nano-delivery systems based on the solubility and expected functionality of bioactive ingredients may provide the opportunity to design new components and interfacial structures for applications in the food and pharmaceutical industries. The essence of the problem proposed to be solved in the doctoral thesis is to define / investigate the interactions between biopolymers used to create multicomponent colloidal systems used in food production and to evaluate the effectiveness of using experimentally produced colloids in shaping the quality and durability of food storage. |
| Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters) | The candidate is expected to have: an academic title of Master of Science in food technology, biotechnology or exact and natural sciences in the discipline of biological sciences, a large commitment to do research, 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 in working with polymers and or bioactive substances as well as has ability in working with MS Office (Excel, Word), Statistica etc. |
| Details of the project to support PhD research | |
| 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) | 0 |
| d) Project website | |