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| <b>Name and surname:</b>   | <b>Dusan Mistic</b>  |
| <b>Academic Degree:</b>  | dr hab. (DSc.)   |
| <b>Institute/Department:</b>   | Department of Functional Food Product Development  |
| <b>e-mail address:</b>   | dusan.mistic@upwr.edu.pl   |
| <b>ORCID:</b>  | 0000-0001-5393-8922  |
| <b>UPWr Base of Knowledge - link:</b>  | <a href="https://bazawiedzy.upwr.edu.pl/info/author/UPWr6936ed45a3b457ab3851fbc2810ed55/Profil%2Bosoby%2B%25E2%2580%2593%2BDu%25C5%25A1an%2Bmi%25C5%25A1%25C4%2587%2B%25E2%2580%2593%2BUniersytet%2BPrzyrodczy%2Bwe%2BWroc%25C5%2582awiu?r=author&amp;tab=&amp;lang=pl">https://bazawiedzy.upwr.edu.pl/info/author/UPWr6936ed45a3b457ab3851fbc2810ed55/Profil%2Bosoby%2B%25E2%2580%2593%2BDu%25C5%25A1an%2Bmi%25C5%25A1%25C4%2587%2B%25E2%2580%2593%2BUniersytet%2BPrzyrodczy%2Bwe%2BWroc%25C5%2582awiu?r=author&amp;tab=&amp;lang=pl</a>  |
| <b>Researchgate:</b>   | <a href="https://www.researchgate.net/profile/Dusan-Mistic">https://www.researchgate.net/profile/Dusan-Mistic</a>  |
| <b>Personal website / Working group website:</b>   |  |
| <b>Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):</b>                               | Molecular and physiological response of foodborne pathogens to selected natural bioactive compounds and development of novel biodegradable polymers with antibacterial activity, NCN , OPUS 18   |
|  | Second supervisor (from other discipline, Polish or international research unit)   |
| <b>Name and surname:</b>   | Irena Zizovic  |
| <b>Academic Degree:</b>  | dr hab. inż. (Dr. Sc)  |
| <b>Faculty, Institute/Department:</b>  | Faculty of Chemistry, PWr  |
| <b>e-mail address:</b>   | irena.zizovic@pwr.edu.pl   |
| <b>ORCID:</b>  | 0000-0003-3945-7051 <a href="#">View this author's ORCID profile</a>   |
| <b>UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5):</b>                      | <p>Towards a modern approach to traditional use of <i>Helichrysum italicum</i> in dermatological conditions: In vivo testing supercritical extract on artificially irritated skin<br/>Maksimovic, S., Stankovic, M., Roganovic, S., ...Tadic, V., Zizovic, I.<br/><i>Journal of Ethnopharmacology</i>, 2023, 301, 115779</p> <p>Supercritical CO<sub>2</sub> Impregnation of Thymol in Thermoplastic Starch-Based Blends: Chemico-Physical Properties and Release Kinetics<br/>Lucic Skoric, M., Milovanovic, S., Zizovic, I., ...Malinconico, M., Kalagasidis Krusic, M.<br/><i>Polymers</i>, 2022, 14(20), 4360</p> <p>Application of the Integrated Supercritical Fluid Extraction–Impregnation Process (SFE-SSI) for Development of Materials with Antiviral Properties<br/>Lukic, I., Pajnik, J., Nisavic, J., ...Szekely, E., Zizovic, I.<br/><i>Processes</i>, 2022, 10(4), 680</p>   |
| <b>Participation projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):</b>                                  | Molecular and physiological response of foodborne pathogens to selected natural bioactive compounds and development of novel biodegradable polymers with antibacterial activity  |
| <b>PhD topic:</b>  | Antibacterial activity of polymeric materials impregnated with natural antimicrobial molecules   |
| <b>Research discipline in Doctoral School:</b>   | Nutrition and Food Technology  |
| <b>Short description of the research problem to be solved in the PhD (minimum 1000 characters):</b>  | <p>The main goal of this Ph.D. thesis is to accurately whether molecules with proven strong antibacterial activity retain their activity after impregnation in polymer, experimental materials hypothetically intended for food packaging.</p> <p>NBMs that were selected for this project are a) Usnic acid (UA) commonly found in the lichen (mostly <i>Usnea barbata</i>) has shown a variety of biological activities, including antimicrobial activity against Gram positive bacteria. b) Xanthohumol (XA) occurs only in the hop (<i>Humulus lupulus</i>). Its strong anticarcinogenic activity is the focus of attention, but there are anxiolytic, anti-inflammatory, anti-obesity and antibacterial effects c) Carnosic acid (CA), originates from sage (<i>Salvia</i> spp.) and rosemary (<i>Rosmarinus officinalis</i>), is very important compound due to its proven strong antioxidant activity. The functionality of NBMs on the materials will be examined, that is, whether they retain their activity. While this is entirely fundamental research, the end results of this project can be of great future benefit in the applied food industry as well as in medicine.</p> |
| <b>Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):</b> | Communicative person, knowledge in English B2, written and spoken, master thesis in food science or biotechnology, or similar. Experience in laboratory work, especially in microbiology (pathogenic microorganisms, foodborne pathogens and biofilms), basic knowledge in molecular methodology (PCR), strong ambition and orientation to science and publishing. Open minded, hard working person, able to work alone or in groups (team worker). Having experience (or being ready to learn) to prepare and to present results publicly, at congresses and seminars, ready to go abroad for more than 6 months in international laboratories and work in international scientific teams.  |
| <b>a) Project title:</b>   | Molecular and physiological response of foodborne pathogens to selected natural bioactive compounds and development of novel biodegradable polymers with antibacterial activity  |
| <b>b) Agreement number:</b>  | (UMO-2019/35/B/NZ9/02774)  |
| <b>c) Number of months in the project to support PhD (in months; starting from 1st of October 2022):</b>   | 12   |
| <b>Project website:</b>  |  |