Candidate supervisor's information summary form

maximum 2 pages – it should be a summary of most important achievements

Name and surname, degree, academic title: Gabriela Rutkowska, PhD, DSc.	
Academic discipline/disciplines	Land Engineering, Surveying and Transport (ILGT): 100% N
Professional development (degrees and titles) in chronological order	1995 - Master of Science in Environmental Engineering 2000 - Doctoral degree - Field of agricultural sciences/Environmental management 2024 - Postdoctoral degree - Field of engineering and technical sciences/civil engineering and transport
The most important publications/patents/ from the last 3 years (maximum 10)	1. Rutkowska Gabriela, Ogrodnik Paweł, Powęzka Aleksandra, Żółtowski Mariusz, Filip Chyliński, Karolina Kaszewska: Effect of cenospheres on the proprieties of plain concrete exposed to elevated temperature, Clean Technologies and Environmental Policy, 2024, pp. 1-15, DOI:10.1007/s10098-024-03034-3, 100 points 2. Wiśniewski Krzysztof, Rutkowska Gabriela, Jeleniewicz Katarzyna, Dąbkowski Norbert, Wójt Jarosław, Chalecki Marek, Wierzbicki Tomasz: Ecologically Friendly Building Materials: A Case Study of Clay–Ash Composites for the Efficient Management of Fly Ash from the Thermal Conversion of Sewage Sludge, Sustainability, MDPI, vol. 16, no 9, 2024, Article number: 3735, pp. 1-18, DOI:10.3390/su16093735, 100 points 3. Rutkowska Gabriela: The effect of the addition of fly ash from sewage sludge combustion on selected properties of ordinary concrete, 2023, Wydawnictwo SGGW, ISBN 978-83-8237-182-6, [978-83-8237-183-3], 179 pp., 80 points 4. Ogrodnik Paweł, Rutkowska Gabriela, Powęzka Aleksandra, Żółtowski Mariusz, Szulej Jacek, Wiśniewski Krzysztof, Howorus Patryk: Research on the Effect of Fire Thermal Energy on the Microstructure and Properties Mechanical of Fiber-Reinforced Cement Mortars, Energies, MDPI, vol. 16, no 18, 2023, Article number: 6450, pp. 1-21, DOI:10.3390/en16186450, 140 points 5. Rutkowska Gabriela: Assessment of fly ash from thermal treatment of sewage sludge according to the applicable standards, Journal of Ecological Engineering, Polish Society of Ecological Engineering (PTIE), vol. 24, no. 3, 2023, pp. 20-34, DOI:10.12911/22998993/157319, 100 points

	6. Rutkowska Gabriela, Żółtowski Mariusz, Filip Chyliński, Trach Yuliia, Gortych Elżbieta: The Effect of Glass Flour on The Microstructure and Properties of Fiber-Reinforced Concrete: Experimental Studies, Applied Sciences-Basel, MDPI, vol. 13, no 21, 2023, Article number: 11937, pp. 1-17, DOI:10.3390/app132111937, 100 points 7. Wichowski Piotr, Kalenik Marek, Rutkowska Gabriela, Malarski Maciej, Czajkowska Justyna, Franus Wojciech: Properties of products obtained in the process of solidification and stabilization of fly ash resulting from thermal treatment of sewage sludge, Cement Wapno Beton, Fundacja Cement Wapno Beton, vol. 28, no 6, 2023, pp. 389-408, DOI:10.32047/cwb.2023.28.6.3, 200 points 8. Ogrodnik Paweł, Rutkowska Gabriela, Szulej Jacek, Żółtowski Mariusz, Powęzka Aleksandra, Badyda Artur : Cement Mortars with Addition of Fly Ash from Thermal Transformation of Sewage Sludge and Zeolite, Energies, MDPI, vol. 15, no 4, 2022, Article number: 1399, pp. 1-21, DOI:10.3390/en15041399, 140 points 9. Rutkowska Gabriela, Żółtowski Mariusz, Kaszewska Karolina, Powęzka Aleksandra, Ogrodnik Paweł: Analysis of the Possibility of Using Cenospheres in the Production of Cement Mortars for Use in an Elevated Temperature Environmen, Sensors, Multidisciplinary Digital Publishing Institute, vol. 22, no 19, 2022, Article number: 7518, pp. 1-18, DOI:10.3390/s22197518, 100 points 10. Siwiński Jarosław, Szcześniak Anna, Rutkowska Gabriela, Kubiak Katarzyna, Stolarski Adam: Integrated effects of concrete samples size and fibers amount on compressive strength of high- and ultra-high strength concretes based on reactive powders, Structural Concrete, vol. 24, no 1, 2022, pp. 1402-1414, DOI:10.1002/suco.202200417, 100 points
Experience in work with doctoral students (defended doctoral dissertations, initiated doctoral procedures) in chronological order	Lack
Achievements in the area of projects/grants (in the last 5 years)	1) 2019 – Principal investigator of the research project entitled: "Fly ash from thermal treatment of sewage sludge as a concrete modifier" (Agreement No. MNISW/2019/174/DIR of 13 June 2019 on awarding funding in the competition: "Innovation Incubator 2.0", implemented under the measure entitled "Support for scientific research management and commercialization of the

	results of R+D work in scientific units and enterprises" under the Smart Growth Operational Programme 2014–2020 – Action 4.4). 2) 2022 participation in scientific and research work on the development of energy- and process-efficient technology for senior housing under the name "BIOPAN components" – project manager at the Warsaw University of Life Sciences: Łukasz Mazur. As part of the work, the preparation of the report: Recycling of building materials. Analysis of the carbon footprint and recycling of building materials for a retirement home.
Subject area of the research project for which the candidate student is being recruited	The thematic scope includes interdisciplinary research on modern, sustainable technologies in construction, aimed at improving the mechanical, thermal and ecological properties of cement and concrete materials. 1. **Influence of high temperature on concrete and cement mortars** – analysis of microstructural and mechanical changes under the influence of increased temperature, application of additives improving thermal resistance. 2. **Sustainable building materials** – the use of industrial waste (fly ash, cenospheres, glass powder, zeolites) to improve the performance of concrete and cement mortars and reduce the negative impact on the environment. 3. **Modification of concrete and cement mortars** – the use of fibres and microfillers to increase durability, mechanical strength and resistance to extreme conditions. 4. **Characteristics of fly ashes from sewage sludge combustion** – assessment of compliance with ecological and construction standards, their potential application in concrete technology. 5. **Research on high-performance and ultra-high-performance concretes** – the effect of sample size, fiber quantity and mixture composition on the strength and durability of materials.
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