

Candidate supervisor's information summary form

Name and surname, degree, title: dr hab. inż. Agnieszka Karczmarczyk, prof. SGGW	
Discipline/ disciplines of science	Environmental engineering, mining and energy
Professional development (degrees and titles) in chronological order	<p>November 19, 2003 - obtaining a doctoral degree in agricultural sciences in the field of environmental management. Faculty of Engineering and Environmental Management, Warsaw University of Life Sciences</p> <p>July 4, 2018 - obtaining the habilitation degree in technical sciences in the field of environmental engineering. Faculty of Civil and Environmental Engineering, Gdańsk University of Technology</p>
Most important publications/patents over the last 3 years (maximum 10)	<p>Karczmarczyk A, Bus A, Baryła A. Forms of phosphorus bound to reactive material – results from a flow-through experiment with the focus on P reuse. <i>DESALINATION WATER Treat.</i> 2022;258:261–5.</p> <p>Bus A, Karczmarczyk A, Baryła A. Phosphorus reactive materials for permeable reactive barrier filling – lifespan estimations. <i>DESALINATION WATER Treat.</i> 2022;245:9–15.</p> <p>Karczmarczyk A, Kowalik W. Combination of Microscopic Tests of the Activated Sludge and Effluent Quality for More Efficient On-Site Treatment. <i>Water.</i> 2022 Feb 7;14(3):489.</p> <p>Bus A, Karczmarczyk A, Baryła A. Nature-based solutions enhanced by reactive materials for the protection of urban water bodies. <i>DESALINATION WATER Treat.</i> 2023;281:70–7.</p> <p>Karczmarczyk A., Bus A., Baryła A., 2021: Assessment of the efficiency, environmental and economic effects of compact type on-site wastewater treatment plants — results from random testing, <i>Sustainability</i>, 13, 2</p> <p>Karczmarczyk A., Baryła A., Fronczyk J., Bus A., Mosiej J., 2020: Phosphorus and Metals Leaching from Green Roof Substrates and Aggregates Used in Their Composition. <i>Minerals</i> 10, 112</p> <p>Gajewska M., Skrzypiec K., Józwiakowski K., Mucha Z., Wójcik W., Karczmarczyk A., Bugajski P., 2020. Kinetics of pollutants removal in vertical and horizontal flow constructed wetlands in temperate climate <i>Science of the Total Environment</i> 718 (2020) 137371</p> <p>Johannesdottir S.L., MacUra B., McConville J., Lorick D., Haddaway N.R., Karczmarczyk A., Ek F., Piniewski M., Książniak M., OsuchP.: What evidence exists on ecotechnologies for recycling carbon and nutrients from domestic wastewater? A systematic map, w: <i>Environmental Evidence</i>, vol. 9, 2020</p>
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	
Project/grants achievements (from the last 10 years)	Reducing Emissions by Turning Nutrients and Carbon into Benefits (RETURN). 1.12.2017 - 30.06.2018. EU Science for a Better Future of the Baltic Sea Region (BONUS)

	<p>Testing the leachate from extensive green roofs in terms of the amount of water and phosphate content. 25.07. 2016 – 30.06.2018. Implemented under the cooperation agreement 1 / KKS / 2016</p> <p>Effect of biological membrane development on phosphate removal through flow-controlled mineral filters. 01.07.2017 implemented under the cooperation agreement CiiTT / 27/2017</p> <p>Ecotechnology for Sustainable Development (EcoSuD). 2011 - 2013. Źródło finansowania: Svenska Institute (SI)</p>
<p>Topic – research problem – for which the candidate supervisor seeks a doctoral student</p>	<p>The aim of the research is to analyze the potential of phosphorus release from construction and filtration materials. Research is looking at the release potential of phosphorus from different materials and assessment of the influence of external factors, such as temperature, pH, content of organic substances or other pollutants, on the process of phosphorus release. These tests identify materials that may pose a greater threat to water quality and determine the causes of phosphorus release. Based on the research results, strategies can be developed to minimize the risk of phosphorus release, such as the use of appropriate materials or filtration technologies. Analyzing the potential for phosphorus release from construction and filtration materials is an important step towards protecting water resources and improving water quality. Thanks to such a study, it is possible to effectively prevent the negative effects of the release of phosphorus into waters, such as eutrophication or cyanobacterial blooms.</p> <p>Expectations for a PhD candidate: persistence; insight; willingness to acquire and deepen knowledge; oral and written skills (in English); education in the field of environmental engineering / environmental protection / agriculture / biology / chemistry or related.</p>
<p><u>Contact details:</u> Faculty/Institute E-mail address Tel.</p>	<p>Institute of Environmental Engineering, Department of Environmental Development, agnieszka_karczmarczyk@sggw.edu.pl (22)59 35 382</p>