

Candidate supervisor's information summary form

Magdalena Michel, PhD, DSc, prof. WULS	
Discipline/ disciplines of science	environmental engineering, mining and energy
Professional development (degrees and titles) in chronological order	2022 – university professor position 2019 – DSc in the field of environmental engineering, mining and energy 2008 – PhD in the field of environmental improvement
Most important publications/patens over the last 3 years (maximum 10)	<ul style="list-style-type: none"> • Michel MM, Azizi M, Mirosław-Świątek D, Reczek L, Cieniek B, Sočo E. Significance of MnO₂ Type and Solution Parameters in Manganese Removal from Water Solution. <i>International Journal of Molecular Sciences</i>. 2023; 24(5):4448. https://doi.org/10.3390/ijms24054448 • Sočo, E., Domoń, A., Papciak, D., Michel, M., Cieniek, B., Pająk, D. (2022). Characteristics of the Properties of Absodan Plus Sorbent and Its Ability to Remove Phosphates and Chromates from Aqueous Solutions. <i>Materials</i>, 15, 1–21. https://doi.org/10.3390/ma15103540 • Technological processes of water and wastewater treatment. Laboratory. Reczek L., Michel M. M., Siwiec T. WULS-SGGW Publishing House, Warsaw 2022, ISBN 978-83-8237-136-9 • Sočo E, Papciak D, Michel M, Pająk D, Domoń A, Kupiec B. Characterization of the Physical, Chemical, and Adsorption Properties of Coal-Fly-Ash-Hydroxyapatite Composites, <i>Minerals</i>, 2021;11(7):1–19 • Trach Y, Tytkowska-Owerko M, Reczek L, Michel M. Comparison the adsorption capacity of ukrainian tuff and basalt with zeolite-manganese removal from water solution. <i>Journal of Ecological Engineering</i>. 2021;22(3):161–168 • Trach Y, Melnychuk V, Michel M, Reczek L, Siwiec T, Trach R. The Characterization of Ukrainian Volcanic Tuffs from the Khmelnytsky Region with the Theoretical Analysis of Their Application in Construction and Environmental Technologies, <i>Materials</i>, 2021;14(24):1–19 • L. Reczek, M. M. Michel, Y. Trach, T. Siwiec, M. Tytkowska-Owerko: The Kinetics of Manganese Sorption on Ukrainian Tuff and Basalt—Order and Diffusion Models Analysis, <i>Minerals</i>, vol. 10, nr 12, 2020, s. 1-15 • M. M. Michel, L. Reczek, D. Papciak, M. Włodarczyk-Makula, T. Siwiec, Y. Trach 2020: “Mineral Materials Coated with and Consisting of MnO_x—Characteristics and Application of Filter Media for Groundwater Treatment: A Review”. <i>Materials</i> 13(10), 2232 • E. Sočo, D. Papciak, M. Michel 2020: “Novel application of mineral by-products obtained from the combustion of bituminous coal-fly ash in chemical engineering”. <i>Minerals</i> 10(1), 66 • L. Reczek, M. Michel, A. Domozych, T. Siwiec, M. Tytkowska, A. Świątkowski, 2020: “Effect of lead(II) presence on sorption of 4-chlorophenol on synthetic activated carbon”. <i>Desalination and Water Treatment</i> 186, 247-257 • M. M. Michel „Kruszywa melafirowe jako złoża filtrów odmanganiających”,

	<p>Wydawnictwo SGGW, Warszawa 2019, ISBN 978-83-7583-844-2</p> <ul style="list-style-type: none"> • Tytkowska M., Michel M. M., Reczek L. and Siwiec T. 2019: Sorption of Ni(II) on surface of bed grains used in iron and manganese removal filters. Water Science & Technology: Water Supply 19(3), 815-822
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened)	<p>doctoral dissertation in progress "Nickel adsorption in the processes of iron and manganese removal from groundwater"</p> <p>doctoral dissertation in progress "Role of manganese dioxide polymorphs in heavy metals removal from groundwater"</p>
Project/grants achievements (from the last 10 years)	<ul style="list-style-type: none"> • „The significance of MnO_x type in removal of manganese from water” NCN project, Miniatura 4, Nr 2020/04/X/ST8/00554, 2020-2021, finished • „Improving the auto-activation of deposits treating groundwater through the use of melaphyre”, pre-implementation project in "Inkubator Innowacyjności+" Programme, No. MNISW/2017/DIR/36/II+, • „Application of advanced oxidation processes in the technology of water recovery from industrial wastewater”, internship research project for research workers in enterprises No. UDA-POKL.08.02.01-14-021/12-00, • COST Action ES1403 "New and emerging challenges and opportunities in wastewater reuse – NEREUS" • „The use of advanced oxidation for flowback treatment”, SGGW research project for young scientists No. 505-10-052500-K00333-99 • 8 scientific and technical expertise relating to water and wastewater treatment on order from external entities: municipalities, industrial enterprises (PKN Orlen S.A., Synthos S.A., Döhler), foundations (Greenpeace Polska), • 2 implementation of technological studies at the groundwater treatment plants in Seroczyn and in Roztropna, the implementation in water-sewage management in Döhler industrial plant
Topic – research problem – for which the candidate supervisor seeks a doctoral student	<p>Research topics in the field of technological processes of water and wastewater treatment and issues related to water recovery:</p> <ul style="list-style-type: none"> • natural mineral materials in water and wastewater technology • the role of manganese dioxide polymorphs in the process of manganese removal from groundwater • the role of the mineral carrier in the auto-activation of manganese removing filters • determinants of heavy metal and organic compounds desorption from mineral sorbents • water recovery from wastewater in the industrial and service sector in the agglomeration
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