

Candidate supervisor's information summary form

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

Name and surname, degree, title: dr hab. Arkadiusz Przybysz, Professor of SGGW	
Discipline/ disciplines of science	Agriculture and horticulture
Professional development (degrees and titles) in chronological order	<ol style="list-style-type: none"> 1. MSc degree (2005) 2. PhD in agricultural sciences (2009) 3. Postdoctoral degree (habilitation) in agricultural sciences in the field of horticulture (2019) 4. Professor at SGGW (2023)
Most important publications/patens over the last 3 years (maximum 10)	<ol style="list-style-type: none"> 1. Moniuszko H., Puchalska E., Mikowska K., Wójcik-Gront E., Popek R., Lewandowski M., Przybysz A. 2023. Is there a downside to plant ecological services in the city? Influences of particulate matter on the two-spotted spider mite (<i>Tetranychus urticae</i>) foraging on the small-leaved lime in urban conditions, <i>Science of The Total Environment</i>, 905, 167567. 2. Przybysz A., Nawrocki A., Mirzwa-Mróż E., Paduch-Cichal E., Kimic K., Popek R. 2023. Species-specific influence of powdery mildew mycelium on the efficiency of PM accumulation by urban greenery. <i>Environmental Science and Pollution Research</i>, DOI:10.1007/s11356-023-28371-6. 3. Nawrocki A., Popek R., Sikorski P., Wińska-Krysiak M., Zhu Ch.Y., Przybysz A. 2023. Air phyto-cleaning by an urban meadow – Filling the winter gap. <i>Ecological Indicators</i>, 151, 110259, 1-11. 4. Zhao L.Y., Li T.T., Przybysz A., Liu H., Zhang B., An W., Zhu Ch.Y. 2023. Effects of urban lakes and neighbouring green spaces on air temperature and humidity and seasonal variabilities. <i>Sustainable Cities and Society</i>, 91, 1-14. 5. Popek R., Fornal-Pieniak B., Chyliński F., Pawełkiewicz M., Bobrowicz J., Chrzanowska D., Piechota N., Przybysz A. 2022. Not only trees matter—traffic-related PM accumulation by vegetation of urban forests. <i>Sustainability</i>, 14(5), 2973, 1-18. 6. Popek R., Mahawar L., Shekhawat G.S., Przybysz A. 2022. Phyto-cleaning of particulate matter from polluted air by woody plant species in the near-desert city of Jodhpur (India) and the role of heme oxygenase in their response to PM stress conditions. <i>Environmental Science and Pollution Research</i>, 29(46), 70228-70241. 7. Popek R., Przybysz A. 2022. Precipitation plays a key role in the processes of accumulation, retention and re-suspension of

	<p>particulate matter (PM) on <i>Betula pendula</i>, <i>Tilia cordata</i> and <i>Quercus robur</i> foliage. <i>Desalination and Water Treatment</i>, 275, 14-23.</p> <p>8. Zhao L., Li T., Przybysz A., Guan Y., Ji P., Ren B., Zhu Ch. 2021. Effect of urban lake wetlands and neighboring urban greenery on air PM₁₀ and PM_{2.5} mitigation. <i>Building and Environment</i> 206, 108291.</p> <p>9. Sikorski P., Gawryszewska B., Sikorska D., Chormański J., Schwerk A., Jojczyk A., Ciężkowski W., Archiciński P., Łepkowski M., Dymitryszyn I., Przybysz A., Wińska-Krysiak M., Zajdel B., Matusiak J., Łaskiewicz E. 2021. The value of doing nothing—How informal green spaces can provide comparable ecosystem services to cultivated urban parks. <i>Ecosystem Services</i> 50, 101339.</p> <p>10. Przybysz A., Popek R., Stankiewicz-Kosyl M., Zhu Ch.Y., Małecka-Przybysz M., Maulidyawati T., Mikowska K., Deluga D., Grizuk K., Sokalski-Wieczorek J., Wolszczak K., Wińska-Krysiak M. 2021. Where trees cannot grow—Particulate matter accumulation by urban Meadow. <i>Science of The Total Environment</i> 785, 147310.</p>
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	Supervisor of PhD student (MSc Adam Nawrocki) in the second year of the doctoral school.
Project/grants achievements (from the last 10 years)	<p>‘High-end Foreign Experts Introduction Plan of China’ 2022-2023, G2022157005L, researcher.</p> <p>‘Mitigating climate changes and adapting to their effects in Wyszaków’, 2022-2023, project founded by the European Economic Area (EEA) Financial Mechanism, MFEOG.07.03.01-07-0057/21-00, leader in WULS-SGGW.</p> <p>‘Air pollutants in road side environment of big cities: Microplastic, particulate matter, heavy metals phytoremediation and their effects on plants and insects’, 2021-2024, SONATA (NCN), UMO-2020/39/D/NZ9/00969, researcher.</p> <p>‘Services of semi-natural ecosystem in the urban sprawl zone’, 2021, project financed from the funds of WULS-SGGW, researcher.</p> <p>‘Inventory and determination of the reclamation possibility of selected wasteland in Warsaw for the purposes of its use in the urban green area system’, 2017-2019, funded by Greenery Board of the Capital City of Warsaw (11/PN/2017, nr:</p>

	44/2017/IZW), coordinator and performer of 2 research tasks.
Topic – research problem – for which the candidate supervisor seeks a doctoral student	<p>The impact of urban conditions on the effectiveness of air phytoremediation:</p> <ol style="list-style-type: none"> 1. Assessment of the impact of urban conditions (drought, increased salinity, soil and air pollution, poor quality and compacted soil, lack of light) on morphological parameters (e.g. amount of waxes, presence of trichomes) and physiological processes (e.g. gas exchange) determining the effectiveness of air biofiltration. 2. Investigating the impact of urban conditions on the ability of plants (trees, shrubs, herbaceous plants) to biofiltrate air from particulate matter (PM) and trace elements. 3. Assessment of the impact of urban conditions on the retention of PM and trace elements on plants treated with simulated precipitation (different intensity and duration) and wind (different strength).
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