

# Prospective supervisor's form

Name of the supervisor: Aneta Łuczkiwicz

Academic title: GUT professor

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Department of Water and Wastewater Technology

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Discipline: environmental engineering, mining and pow none

Optional

Key words (obligatory four key words describing research interests / expertise):

# nutrient cycling in water resources

# advanced wastewater treatment

# microbial resistance to stressors

# biorefinery and bio-based products

## Bibliometric indicators

1. Number of journal publications in WoS/ Scopus 30/31

2. Citations excluding self-citations WoS 337 Scopus 371

3. Hirsch index WoS 11 Scopus 12

1. The number of PhD students who have graduated under your supervision: -

2. The number of PhD students currently supervised:

a. within the current doctoral school -

b. within doctoral studies (previous 2

3. Are you currently accepting new PhD students:

a. Polish Yes/No Yes

b. Foreign Yes/No Yes

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Research interests or topics offered for PhD research (no more than 2000 characters)<sup>ii</sup>

Antimicrobial resistance to stressors:

Distribution, selection and persistence of clinically relevant bacteria and genes by culture-dependent approach, genomics and shotgun metagenomics; understanding the differences in the community structure of microbiota, resistome and mobilome by comparative analysis of the Arctic, Norwegian and Baltic coastal environments.

Nutrient cycling in water resources:

The Baltic Proper N-budget establishment by microbial activity and N-removal processes in both the water column and sediments with regards to substrate availability.

Advanced wastewater treatment:

Antimicrobials in the environment: regional consumption patterns and chemical burden caused by pharmaceuticals released to the receiver by wastewater treatment plants in terms of sustainable implementation of advanced wastewater treatment.

Assessment and development of green technologies in handling storm water in harbors and other industrial sites.

Biorefinery and bio-based products:

Development of an innovative biorefinery scheme for the production of high-performance biofuels and a high-quality fertilizer from the organic fraction of municipal solid waste, food waste and fish sludge.

Funding or special equipment needed to carry out a PhD project <sup>iii</sup>:

1. Is funding available for experimental work: *Yes/No/not needed*

Yes

2. Is the equipment needed to complete a PhD project

available in your lab/department: *Yes/No/not needed*

Yes

Most important publications – no more than 5 published after 1.01.2018

No	Authors/title/journal	Number of points according to the current list of the Ministry of Science and Higher Education	Publication year
1.	Łuczkiwicz A., Jankowska K., Fudala-Książek S., Olańczuk-Neyman Fudala-Książek S., Pierpaoli M., Luczkiewicz A. 2018. Efficiency of landfill leachate treatment in a MBR/UF system combined with NF, with a special focus on phthalates and bisphenol A removal. <i>Waste Manag.</i> , 78, 94-103, doi:10.1016/j.wasman.2018.05012	200	2018
2.	Fudala-Książek S., Sobaszek M., Luczkiewicz A., Pieczyńska A., Ofiarska A., Fiszka-Borzyszkowska A., Sawczak M., Ficek M., Bogdanowicz R., Siedlecka E.M., 2018. Influence of the boron doping level on the electrochemical oxidation of raw landfill leachates: Advanced pre-treatment prior to the biological nitrogen removal.	200	2018

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3.	Kosek K, Luczkiewicz A, Koziol K, Jankowska K, Ruman M, Polkowska Ż, 2019. Environmental characteristics of a tundra river system in Svalbard. Part 1: Bacterial abundance, community structure and nutrient levels. Science of The Total Environment, 653, 1571-1584.	200	2018
4.	Kosek K, Koziol K, Luczkiewicz A, Jankowska K, Chmiel S, Polkowska Ż (2019). Environmental characteristics of a tundra river system in Svalbard. Part 2: Chemical stress factors. Science of The Total Environment, 653, 1585-1596. <a href="https://doi.org/10.1016/j.scitotenv.2018.11.012">https://doi.org/10.1016/j.scitotenv.2018.11.012</a>	200	2019
5.	Dettlaff A., Jakóbczyk P., Sobaszek M., Ficek M., Dec B., Luczkiewicz A., Szala M., Wojas J., Ossowski T., Bogdanowicz R. (2020): Electrochemical detection of 4,4',5,5'-tetranitro-1H, 1'H-2,2'-biimidazole on boron-doped diamond/graphene nanowall electrodes. IEEE Sensors Journal. 387,1-9	100	2020

### Most recent externally funded projects you were involved in – no more than 3

No	Project title, the name of the Principal Investigator (PI) and the institution the project was carried out	Years	Role in the project <sup>iv</sup>
1.	MORPHEUS (Model Areas for Removal of Pharmaceutical Substances in the South Baltic) STHB.02.02.00-SE-0038/16; Interreg South Baltic Programme 2014-2020   ERDF. A flagship project of the EU Strategy for the Baltic Sea Region. PI- PhD Erland Björklund, Kristianstad University, Sweden	2017-2019	Co-I
2.	DEZMETAN Development of the technology for preparation substrates used in methane co-fermentation by disintegration methods. NCBiR, Operational Program: Smart Growth 4.1.2 OP SG Regional scientific research agendas POIR.04.01.02-00-0022/17-00). PI - Assoc. Prof. Krzysztof Czerwionka, GUT	2018-2020	R
3.	WISA – Water Innovation Interreg South Baltic Programme 2014-2020   ERDF (European Regional Development Fund); PI: Krinova AB, Sweden	2019-2022	Co-I

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### Additional relevant information – (no more than 1600 characters)<sup>v</sup>

Ongoing research projects are performed in cooperation with industrial and international partners.  
It is possible to obtain additional scholarship from one of the listed projects.

<sup>i</sup> You may select up to two disciplines out of 12 disciplines represented in the Doctoral School

<sup>ii</sup> Observe the limit of not more than 2000 characters

<sup>iii</sup> Leave only one answer

<sup>iv</sup> Select the role in the project: PI stands for principal investigator (refers to the holder of an independent grant and the lead researcher for the grant project), Co-I for co-investigator (Co-I assists the principal investigator in the management and leadership of the research project), R for researcher

<sup>v</sup> Add any other relevant information e.g. awards for PhD students whom you supervised (no more than 1600 characters)