Prospective supervisor's form

Name of the supervisor: Grzegorz Boczkaj

Academic title: PhD.Sc.Eng.

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Faculty of Chemistry

Gdańsk University of Technology **Department of** Process Engineering and Chemical Technology

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Discipline[i] chemical sciences [NCh] environmental engineering, mining and po

Optional

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

Advanced Oxidation Processes (AOPs

wastewater treatment

cavitation

deep eutectic solvents (DESs)

Bibliometric indicators

1. Number of journal publications in WoS/ Scopus 50
2. Citations excluding self-citations WoS 865 Scopus 1034
3. Hirsch index WoS 18 Scopus 20

1. The number of PhD students who have graduated under your supervision: 2
2. The number of PhD students currently supervised:
   a. within the current doctoral school 1
   b. within doctoral studies (previous system) 3
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)[ii]

1. New developments for Advanced Oxidation Processes (AOPs): catalytic processes, photocatalysis, hybrid treatment, cavitation based AOPs.
2. Applications of cavitation phenomena in chemical engineering.
3. Selected aspects of modern separation techniques; chromatography; adsorption; new types of sorbents.
4. Studies on synthesis, characterization and new applications of deep eutectic solvents; DES; extraction.
5. Kinetics studies of chemical reactions.
6. Chemistry of persulfates: activation, application for AOPs, other applications.
6. New technologies for wastewater treatment.
7. Hydrocarbons processing; bitumen technology.
8. New technologies for environmental protection; environmental engineering.
9. Selected topics (please contact me for details) on chemical engineering; chemical technology; technical analytics; analytical chemistry.

Funding or special equipment needed to carry out a PhD project[iii]:

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.	Gągol M., Przyjazny A., Boczkaj G., 2018, Wastewater treatment by means of advanced oxidation processes based on cavitation – A review, Chem. Eng. J. 338, 599-627.	200	2018
2.	Shah, N. S., Khan J. A., Sayed M., Khan Z. U. H., Rizwan A. D., Muhammad N., Boczkaj G. , et al. 2018, Solar light driven degradation of norfloxacin using as-synthesized Bi3+ and Fe2+ Co-doped ZnO with the addition of HSO5−: Toxicities and degradation pathways investigation, Chem. Eng. J. 351, 841-855.	200	2018

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3.	Fernandes A., Makoś P., Wang Z., Boczkaj G. 2019, Synergistic effect of TiO2 photocatalytic advanced oxidation processes in the treatment of refinery effluents, Chem. Eng. J. in press DOI: 10.1016/j.cej.2019.123488	200	2019
4.	Gągol M., Soltani R., Przyjazny A., Boczkaj G. 2019, Effective degradation of sulfide ions and organic sulfides in cavitation-based Advanced Oxidation Processes (AOPs), Ultrason. Sonochem. 58, 1-6.	140	2019
5.	Fernandes A., Makoś P., Khan J., Boczkaj G.: Pilot scale degradation study of 16 selected volatile organic compounds by hydroxyl and sulfate radical based advanced oxidation processes// JOURNAL OF CLEANER PRODUCTION. -Vol. 208, (2019), s.54-64.	140	2019

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 [i]
1.	Study of transformations of chemical compounds under cavitation conditions, G. Boczkaj (PI), National Science Centre.	2019-2021	PI
2.	Research on novel types of extraction and sorption media, G. Boczkaj (PI), National Science Centre.	2019-2022	PI
3.	Studies on the preparation and properties of sorbents produced from bitumen (BitumSorbent), G. Boczkaj (PI), The National Centre for Research and Development.	2015-2019	PI

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Additional relevant information – (no more than 1600 characters)[v]

One (of 2) supervised PhD student obtained a PhD title with honours. A large number of studies is performed in cooperation with the industrial partners. Listed projects are performed in international scientific environment, including cooperation with foreign scientific partners. It is possible to obtain additional scholarship from one of the listed projects.

[i] You may select up to two disciplines out of 12 disciplines represented in the Doctoral School

[ii] Observe the limit of not more than 2000 characters

[iii] Leave only one answer

[iv] 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

[v] Add any other relevant information e.g. awards for PhD students whom you supervised (no more than 1600 characters)