PhD Advisor form

Name of the advisor: Marek Szkodo

Academic title: PH.D., D.Sc., Eng.

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Department of Materials Engineering and Welding

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Discipline[i] Mechanical Engineering, Materials Science

Bibliometric indicators

1.	Number of journal publications in WoS/ Scopus	41/48
2.	Citations (WoS/Scopus) excluding self-citations	120/76
3.	Hirsch index (WoS/Scopus)	6/7
4.	Hirsch index in Google Scholar	11
5.	Citations in Google Scholar	502

1. The number of PhD students who have graduated under your supervision: 3
2. The number of PhD students currently supervised: 7
3. Are you currently accepting new PhD students:
    a. Polish Yes
    b. Foreign Yes

PhD Advisor form

Research interests or topics offered for PhD research (no more than 2000 characters)[ii] After obtaining the DSc, degree I am continuing my interests regarding the possibility of increasing cavitation erosion resistance of construction materials through by means of various types of technological treatments such as heat treatment, thermo-chemical treatment or laser processing. My interests also concern other forms of degradation of materials such as fatigue, fretting or corrosion of construction materials and methods of increasing resistance to these forms of degradation. Another area of my interest is the possibility of improving the properties of the surface layer of materials by shaping their microstructure using a laser beam and applying protective coatings with the use of nanoparticles of ceramic materials. My interests are also connected with modern techniques of welding materials such as hybrid welding or friction stir welding and the possibilities of using these technologies to limit residual stresses in welded joints. Another area of my interest is the use of biocellulose in medical and technical applications. In 2011 and 2012, I was also involved in the preparation of the project aimed at testing the suitability of nanocellulose, a new material produced by a bacterial strain, in cardiac surgery applications. The application for a grant was made by a consortium led by Medical University of Gdańsk and the Faculty of Mechanical Engineering of Gdańsk University of Technology (represented by me) was one of the seven members of the consortium. As part of this project, I carried out work related to the study of the impact of nanocellulose production technology on its mechanical properties. In 2012, I built also a consortium consisting of the Mechanical Department and CEMET Ltd. from Gdańsk. The consortium submitted a project entitled "Protector Against Swelling Clay - a borehole tool" and it obtained financing. I became the manager of the project which ended in November 2016.

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

1. Is funding available for experimental work: Yes/No/not needed
2. Is the equipment needed to complete a PhD project available in your lab/department: Yes/No/not needed

Most recent publications in WoS/SCOPUS journal – no more than 5 published after 1.01.2017

No	Authors/title/journal	Journal IF/Quartile – for WoS and SNIP/ CiteScore for SCOPUS	Publication year
1.	Kołaczkowska M., Siondalski P., Kowalik M., Pęksa R., Długa A., Zając W., Dederko P., Kołodziejska I., Malinowska-Pańczyk E., Sinkiewicz I., Staroszczyk H., Śliwińska A., Stanisławska A., Szkodo M., Pałczyńska P., Jabłonski G., Borman A.,Wilczek P.: Assessment of the usefulness of bacterial cellulose produced by Gluconacetobacter xylinus E25 as a new biological implant. Materials Science & Engineering C 97, (2019) 302–312,	IF 5,080/../	2019

2.	Radtke A., Ehlert M., Jędrzejewski T., Sadowska B., Więckowska-Szakiel M., Holopainen J., Ritala M., Leskelä M., Bartmański M., Szkodo M., Piszczek P., "Titania Nanotubes/Hydroxyapatite Nanocomposites Produced with the Use of the Atomic Layer Deposition Technique: Estimation of Bioactivity and Nanomechanical Properties", *Nanomaterials*, 9 (2019) 123,	IF 3.553/../	2019
3.	Radtke A., Ehlert M., Grodzicka M., Muził T., **Szkodo M**., Bartmański M., Piszczek P.: Studies on silver ions releasing processes and mechanical properties of surface-modified titanium alloy implants. International Journal of Molecular Sciences 19, (2018), 3962; doi:10.3390/ijms19123962,	IF 3,687/…/	2018
4.	Bień A., **Szkodo M.**, Doberski J., Karpiński B.: Effect of selective laser treatment on the initiation of fatigue crack in main part of undercarriage drag strut. Chinese Journal of Aeronautics. Vol. xxx, xxx, (2018),– przyjęty do druku https://doi.org/10.1016/j.cja.2018.05.021	IF 1,614/…/	2018
5.	Kmieć M., Karpiński B., Antoszkiewicz M., **Szkodo M.**: Laboratory research on the influence of swelling clay on the quality of borehole cementing and evaluation of clay-cutting wellbore tool prototype. Applied Clay Science. Vol. 164, (2018), 13-25	IF 3,641	2018

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	Year awarded	Role in the project
1.	Project NCBiR PBSII / KARDIO BNC in the "Program of Applied Research" program - Research on the use of bionanocellulose (BNC) in regenerative medicine in the aspect of bioimplants in cardiac surgery and vascular surgery.	2014 - 2016	co-PI
2.	NCBiR project no. BG1 / PPPI in the "Blue Gas" program - Borehole tool - Protector against swellable clays. Project manager - a project carried out in a consortium with CEMET from Gdańsk	2013 - 2016	PI
3.	- NCBiR project No. BG1 / GASŁUPMIKROS in the "Blue Gas" program - co-contractor. Selection of the optimal microseismic monitoring technology in the hydraulic fracturing process. Optimization of processing and interpretation of measurement data.	2014 - 2016	R

Additional relevant information – (no more than 1600 charters)[iv] (Please fill in here)

[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 300 words [iii] Leave only one answer

[iv] Add any other relevant information eg. awards for PHD students whom you supervised (no more than 200 words)