

# Prospective supervisor's form

Name of the supervisor: Arkadiusz Żak

Academic title: D. Sc., Eng.

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Gdańsk University of Technology Faculty of Electrical and Control Engineering

Department of Mechatronics and High Voltage Engineering

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Discipline: control, electronic and electrical engineering mechanical engineering [IMe]

Optional

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

# modelling of physical phenomena

# finite element method

# condition monitoring and diagnosis

# periodic structures

## Bibliometric indicators

1. Number of journal publications in WoS/ Scopus 72 / 79

2. Citations excluding self-citations WoS 1006 Scopus 1106

3. Hirsch index WoS 20 Scopus 22

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

2. The number of PhD students currently supervised:

a. within the current doctoral school 0

b. within doctoral studies (previous system) 1

3. Are you currently accepting new PhD students:

a. Polish Yes/No Yes

b. Foreign Yes/No Yes

## Prospective supervisor's form

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

Topics:

1. Modelling of EM field distributions in living organisms.
2. Passive and active periodic structures for vibroacoustics.
3. Analysis of treeing of dielectric materials.
4. Assessment of electromechanical properties of dielectric materials.

Requirements:

1. Good knowledge in Electrical and Mechanical Engineering, Physics, Biology (in the case of topic 1).
2. Programming skills.
2. Knowledge of the Finite Element Method.
3. Knowledge of computational packages: Mathematica, Matlab.
4. Good knowledge of English.

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*

No

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.	M. Palacz, A. Żak, M. Krawczuk / FEM-based wave propagation modelling for SHM: Certain numerical issues in 1D structures / Special Issue "Non-destructive Testing of Structures", Materials	140	2020
2.	K. Askaripour, A. Żak / A study on diagnosing both isotropic and orthotropic, intentionally damaged laminates / Nondestructive Testing and Evaluation	70	2020

**Prospective supervisor's form**

3.	A. Żak, M. Krawczuk, G. Redlarski, S. Koziel / A three-dimensional periodic beam for vibroacoustic purposes / Mechanical Systems and Signal Processing	200	2019
4.	A. Żak, M. Krawczuk / A higher order transversely deformable shell-type spectral finite element for dynamic analysis of isotropic structures / Finite Element in Analysis and Design	100	2018
5.	Ł. Doliński, M. Krawczuk, A. Żak / Detection of delamination in laminate wind turbine blades using one-dimensional wavelet analysis of modal responses / Shock and Vibration	70	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	Years	Role in the project <sup>iv</sup>
1.	Programme PROM - International exchange of PhD students and academic staff	2018-2019	PI
2.	Programme PROM - International exchange of PhD students and academic staff	2019-2020	PI
3.	N/A		PI

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

More detailed information about particular PhD topics can be presented to a candidate upon a meeting arranged with the supervisor

- <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)