

Prospective supervisor's form

Name of the supervisor: Jacek Marszal

Academic title: Ph.D., D.Sc., Associate Professor

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Gdańsk University of Technology Faculty of Electronics, Telecommunications & Informatics

Department of Sonar Systems

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Discipline: technical informatics and telecommunication control, electronic and electrical engineering

Optional

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

hydroacoustics

sonar systems

underwater acoustic communications

digital signal processing

Bibliometric indicators

1. Number of journal publications in WoS/ Scopus 16/19

2. Citations excluding self-citations WoS 26 Scopus 34

3. Hirsch index WoS 6 Scopus 6

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) 4 (extramural)

3. Are you currently accepting new PhD students:

a. Polish Yes/No Yes

b. Foreign Yes/No No

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

- 1. Hydrolocation systems and equipment – real signals-based verification:
- 2. Sonar systems - all categories of types and applications
- 3. Underwater Doppler navigation,
- 4. High-resolution methods in the sonar with linear and cylindrical antenna
- 5. Interferometric echo sounding
- 6. Theoretical analysis, software simulation, practical certification.
- 7. Digital Signal Processing (DSP) in hydro- and aero-acoustic
- 8. Real-time systems using HPEC (High Performance Embedded Computing):
- 9. Ultrasonic and phonic channel systems,
- 10. Ultrasonic and phonic broadband transmitters/antennas,
- 11. Measurement analysis and real-time signals visualization,
- 12. Digital underwater communication systems (UAC) :
- 13. Underwater monitoring networks
- 14. Communications in the swarm of underwater autonomous vehicles (AUV).
- 15. All other topics related to underwater acoustics

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

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 publicatio 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.	Z. Ostrowski, R. Salamon, I. Kochańska, J. Marszal, Underwater Navigation System Based on Doppler Shift – Measurements and Error Estimations, Polish Maritime Research, Vol, 27, No 1 (105), 2020, pp.180 - 187.	70	2020
2.	I. Kochańska, J. H. Schmidt, J. Marszal, Shallow Water Experiment of OFDM Underwater Acoustic Communications, Archives of Acoustics, Vol. 45, No 1, 2020, pp. 11 - 18	70	2020

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3.	I. Kochańska, I. Nissen, J. Marszal, A method for testing the wide-sense stationary uncorrelated scattering assumption fulfillment for an underwater acoustic channel, Journal of the Acoustical Society of America, Vol. 143, No 2, 2018, pp. 1 - 5.	100	2018
4.			
5.			

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 ^{iv}
1.	Long-Range Anti-Submarine Warfare (ASW) Sonars with a Cylindrical Array . Implemented on 2 Polish Navy ships. Projects carried out under contracts with the Ministry of National Defense 2007-2020.	2007 - 2020	PI
2.	Mine Countermeasure (MCM) Hull-Mounted Sonar with a Flat Array. Implemented on 12 Polish Navy ships. Projects carried out under contracts with the Ministry of National Defense 2002-2018.	2002 - 2018	PI
3.	Silent Sonar - Development of a new type of low probability of intercept sonar. Project carried out under the NCBiR National Centre for Research & Development Grant No. N517624139 (2010-2012) and further continued.	2010 - 2017	Co-I

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Additional relevant information (no more than 1600 characters)^v

Prof. Marszal is the head of the Sonar Systems Department. He is the author or co-author of over 200 scientific publications, 10 patents and numerous implementations related mainly to the improvement of sonar systems for the needs of the Polish Navy and other institutions related to maritime and water management. These devices are used on Navy ships and helicopters, as well as in ports and rivers. Their high technical level and operational values were confirmed by the successes of Navy ships achieved in NATO exercises.

Prof. Marszal is a member of the Institute of Electrical and Electronics Engineers (IEEE), the European Acoustics Association (EAA) and the Polish Acoustic Society (PTA), in which he has been the chairman of the Gdańsk Branch since 2014. He was awarded 33 times by the Rector of Gdansk University of Technology for scientific, didactic and implementation activity.

- 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)