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**Discipline<sup>i</sup>** Control, electronic and electrical engineering

**Bibliometric indicators**

1.	Number of journal publications in WoS/ Scopus	43/45
2.	Citations (WoS/Scopus) excluding self-citations	185/320
3.	Hirsch index (WoS/Scopus)	5/9
4.	Hirsch index in Google Scholar	15
5.	Citations in Google Scholar	1163

1. The number of PhD students who have graduated under your supervision: 5

2. The number of PhD students currently supervised: 1

3. Are you currently accepting new PhD students:

- a. Polish Yes
- b. Foreign Yes

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

Research interests: ship automation, ship control system, ship electronics, marine autonomous surface vehicles, application of artificial intelligence method to ship control, avoiding collision, safety at sea, evolutionary algorithms, methods of optimization, paths planning in a non-stationary environment. Proposals for doctoral thesis: (1) Evolutionary methods of paths planning of moving objects in non-stationary environment, keywords: paths planning, evolutionary algorithms, ship control in a collision situation, simulation of real processes, modelling and control of movement of objects, multi-criteria optimization. (2) Control of autonomous marine surface vehicle (e.g. yacht) with the use of artificial intelligence methods, keywords: modeling and control of a surface vehicle, fuzzy logic, evolutionary algorithms, multilayer control structure. (3) Power management in the power system of the ship with the dynamic positioning systems, keywords: ship's power system, power management, dynamic positioning, modelling and simulation, optimization of power generation on board. (4) Synthesis of control of dynamically positioned vessels (DP) with high level of hydrodynamic disturbances, keywords: dynamic positioning, predictive and fuzzy control, DP ship control optimization, modelling and simulation. (5) Allocation of thrusters on the vessel dynamically positioned with the use of a predictive controller, keywords: dynamic positioning, predictive control, thrusters allocation, ship dynamics, modelling and simulation.

PhD Advisor form

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

1. Is funding available for experimental work: No
2. Is the equipment needed to complete a PhD project available in your lab/department: Yes

**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.	Witkowska, A., Cienierzchalski, Adaptive dynamic control allocation for dynamic positioning of marine vessel, Ocean Engineering	2,14/1,93/2,7	2018
2.	Witkowska, A., Cienierzchalski, Adaptive dynamic control allocation for over-actuated dynamic positioning system, IFAC-PapersOnLine	(Please fill in here)	2018
3.	Jaroczek, Witkowska, A., Cienierzchalski, Data fusion of GPS sensors using Particle Kalman Filter for ship dynamic positioning	(Please fill in here)	2017
4.	Kuczkowski, E., Cienierzchalski, R. Path planning algorithm for ship collisions avoidance in environment with changing strategy	(Please fill in here)	2017
5.	(Please fill in here)	(Please fill in here)	(fill in)

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

No	Project title, the name of the Princ. Investigator (PI) and the institution the project was carried out	Year awarded	Role in the project
1.	Modifications and variants of the evolutionary method of the paths planning of a mobile object, Roman Cienierzchalski, Gdansk University of Technology	2013	PI
2.	Ship navigation system in a marine environment using a multi-population competing evolutionary algorithm, Roman Cienierzchalski, Gdynia Maritime University	2009	PI
3.	Application of evolutionary algorithms and ranking methods to plan the route of a hybrid vessel, Roman Cienierzchalski, Gdynia Maritime University	2009	PI

## PhD Advisor form

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

Requirements for the candidate: basic knowledge of modelling and control theory, methods of artificial intelligence, interest in maritime issues. Software skills in C++ and MatLab. The candidate should have completed the following fields of study: Automation and Robotics, Electrical Engineering or related. Possibility of conducting other topics than those mentioned above in any subject related to ship's automation and ship's control.

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<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 300 words

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

<sup>iv</sup> Add any other relevant information eg. awards for PHD students whom you supervised (no more than 200 words)