

Prospective supervisor's form

Name of the supervisor:

Academic title:

Orcid ID number: <https://orcid.org/0000-0001-7962-6628>

Gdańsk University of Technology Faculty of

Department of

Phone: +48

E-mail:

Personal web page: https://pg.edu.pl/cda6eea50e_marcin.morawiec

Discipline:

Optional

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

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Bibliometric indicators

1. Number of journal publications in WoS/ Scopus

2. Citations excluding self-citations WoS Scopus

3. Hirsch index WoS Scopus

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

2. The number of PhD students currently supervised:

a. within the current doctoral school

b. within doctoral studies (previous

3. Are you currently accepting new PhD students:

a. Polish Yes/No

b. Foreign Yes/No

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

My scientific activities are focused on:

- control systems of electric drive system (dc-machine, induction machine, permanent magnet synchronous motor (PMSM), ring induction machine and others),
- control system of the doubly fed machine working as generator in the wind turbine,
- rotor speed estimation method of electric machines: induction machine, permanent magnet synchronous motor, ring induction machine,
- sensorless control system of an electric machine,
- control system of the current source converter supplied an electric machine,
- control system of the voltage source inverter,
- non-linear control, sliding mode control, adaptive-backstepping control,
- multiphase machines (induction machine, PMSM),
- battery management systems,
- photovoltaic systems,
- control systems in a Smart Grid applications,
- renewable sources,
- electromobility.

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.	Morawiec M., Strankowski P., Lewicki A., Guziński J., Wilczyński F.: Feedback Control of Multiphase Induction Machines with Backstepping Technique// IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS -Vol. 67,iss. 6 (2020), s.4305-4314	200	2020
2.	Morawiec M., Lewicki A.: Application of sliding switching functions in backstepping based speed observer of induction machine// IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS -Vol. 67,iss. 7 (2020), s.5843-5853	200	2020

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3.	Morawiec M., Blecharz K., Lewicki A.: Sensorless Rotor Position Estimation of Doubly-Fed Induction Generator Based on Backstepping Technique// IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS -Vol. 67,iss. 7 (2020), s.5889-5899	200	2020
4.	Blecharz K., Morawiec M.: Nonlinear Control of a Doubly Fed Generator Supplied by a Current Source Inverter// ENERGIES. -Vol. 12, iss. 12 (2019), s.1-15	140	2019
5.	Lewicki A., Morawiec M.: Structure and the space vector modulation for a medium-voltage power-electronic-transformer based on two seven-level cascade H-bridge inverters// IET Electric Power Applications -Vol. 13,iss. 10 (2019), s.1514-1523	100	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.	2018/31/N/ST7/03889 "Testing the properties of a sensorless electric drive with a five-phase induction motor powered from a current inverter", Preludium 16 - supervisor	2019-2021	Co-I
2.	DEC-2013/09/B/ST7/01642 „Control, estimation and diagnostics algorithms for electric drives with multi-phase induction motors and output filters”	2013-2016	PI
3.	Project Manager „Sensorless control system structures of PMSM machine supplied by the Current source Inverters”, NN510 351536.	2009-2010	PI

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

Requirements: knowledge of the machine control system methods, control system of power electronic converters, graduate in electrical engineering.

Expected scope of doctoral dissertation:

- Analysis of existing literature solutions and simulation tests - 1 year
- Proposition of control algorithms - 1-2 years;
- Construction and commissioning and programming of the laboratory stand - 2-3 years;
- Experimental tests with the preparation of the doctoral dissertation manuscript 3-4 years;

The estimated duration of the PhD is 4 years, during which the doctoral student may take actions in the field of:

- Cooperation with domestic and foreign research centers as well as with companies located in Poland and abroad;
- Participation in the Erasmus program and other current national and international programs. Information on current programs can be found on the website of the Department of Scientific Affairs of the PG: <http://pg.edu.pl/dsn>;
- Participation in a scientific conferences;
- Implementation of research projects for young scientists or research projects implemented at the Department of Electrical Drive Automation PG;

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)