

Prospective supervisor's form

Name of the supervisor: Pawel Szczepankowski

Academic title: Professor

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Discipline: control, electronic and electrical engineering none Optional

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

power converters

pulse width modulation

DSP and FPGA devices

signal processing

Bibliometric indicators

1. Number of journal publications in WoS/ Scopus 27

2. Citations excluding self-citations WoS 21 Scopus 28

3. Hirsch index WoS 4 Scopus 5

1. The number of PhD students who have graduated under your supervision: 0

2. The number of PhD students currently supervised:

a. within the current doctoral school 0

b. within doctoral studies (previous system) 2

3. Are you currently accepting new PhD students:

a. Polish Yes/No Yes

b. Foreign Yes/No Yes

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

Prototyping of modern power converter with a variety of topology for industrial application in AC-AC and DC-AC energy conversion. Development and optimization of pulse width modulation algorithms for multi-level, modular and matrix converters. Multi-pulse power converters with coupled reactors for high frequency applications. Modelling of special algorithms and digital structures used in power electronics using HDL languages. Design and comprehensive software for microprocessor control systems with advanced multi-core floating point processors.

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*

No

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.	Szczepankowski P. , Wheeler P. , Bajdecki T. /Application of Analytic Signal and Smooth Interpolation in Pulse Width Modulation for Conventional Matrix Converters/IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS	200	2019
2.	Szczepankowski P. , Nieznański J. /Application of Barycentric Coordinates in Space Vector PWM Computations/IEEE Access	100	2019

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3.	Szczepankowski P. , Bajdecki T. , Strzelecki R./Direct modulation for conventional matrix converters using analytical signals and barycentric coordinates/ IEEE Access	100	2020
4.	Szczepankowski P. , Poliakov N. , Vertegel D. , Szwarc K. J. / A new concept of PWM duty cycle computation using the Barycentric Coordinates in a Three-Dimensional voltage vectors arrangement / IEEE Access	100	2020
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.	"Dystrybucyjny transformator hybrydowy (DTH) jako aktywny element nowoczesnych systemów „Smart Grid”", Wydział Elektrotechniki i Automatyki / Laboratorium Linte^2.	2020	PI
2.	"Laboratorium Innowacyjnych Technologii Elektroenergetycznych i Integracji Odnawialnych Źródeł Energii LINTE2", Wydział Elektrotechniki i Automatyki .	2015	PI
3.	"Opracowanie algorytmów sterowania sprzężonych wieloterminalowych przetwornic DC/DC w.cz. modułów ISES", Instytut Elektrotechniki w Warszawie.	2013	Co-I

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



- 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)