PhD Advisor form

Name of the advisor: Grzegorz Redlarski

Academic title: prof. Ph.D., D.Sc., Eng.

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Discipline[i] Control, electronic and electrial engineering

Bibliometric indicators

1.	Number of journal publications in WoS/ Scopus	35/42
2.	Citations (WoS/Scopus) excluding self-citations	123/165
3.	Hirsch index (WoS/Scopus)	7/8
4.	Hirsch index in Google Scholar	10
5.	Citations in Google Scholar	392

1. The number of PhD students who have graduated under your supervision: 2
2. The number of PhD students currently supervised: 2
3. Are you currently accepting new PhD students:
   a. Polish Yes
   b. Foreign No

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

My scientific interests as well as scientific achievements are connected with automatics, electronics and electrotechnics: the methodology for analysis, processing and classification of signals, parameter estimation (based on cross-validation) as well as process optimization (especially in the case of NP-hard problems) by swarm algorithms. For this reason in our team we try to solve interdisciplinary problems binding together methodologies traditionally used by electrical and control engineering with problems typically associated with biomedical engineering. The above mentioned research as well as their results influence or indicate directions for the development of modern automatics, electronics and electrotechnics tohether with robotics. This is especially well seen in the context of new and interdisciplinary scientific research areas, in which the important role is played by new designs of systems or devices of a very high implementation potential.
Taking into account the above, the topics offered for PhD research can concentrate on:
a) micro power generation – especially optimalisation techniques incluidng swarm algortihms, which aime at the design of power efficient and pro-ecological objects and/or processes;
b) modelling as well as estimation of parameters for modelling of the different formulas used in medicine (BSA, TLV, ToD, GFR etc.);
c) signal processing – in this case, in our team we use various signal processing methods: wavelet analysis; Fourier and Hilbert transform; speech processing; identification and classification of signal features methodology; swarm optimization; artificial neural networks; etc. especially for analysis of non-stationary, biomedical signals (EMG, PCG, ECG, EEG, HR, SV, pH, etc);
d) optimization of control processes for mobile robots in the presence of static and dynamic obstacles;
e) the influence of electromagnetic fields on living organisms (plants and animals).

PhD Advisor form

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

1. Is funding available for experimental work: Not applicable
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.	Kupczyk A., Maczynska J., Redlarski G., et al.: Selected Aspects of Biofuels Market and the Electromobility Development in Poland: Current Trends and Forecasting Changes. Applied Sceinces-Basel. Vol. 9, Iss. 2, 254, 1-13.	1.689/Q3/0	2019
2.	Tojza P.M., Redlarski G., Janiak M.: Supporting gastroesophageal reflux disease diagnostics by using wavelet analysis in esophageal pH-metry. Proceedings of the 2018 Federated Conference on Computer Science and Information Systems (FedCSIS), Poznan, Poland, September 09-12, pp. 287-294.	-/-/0	2018
3.	Rzyman G., Redlarski G., Palkowski A., Tojza P.M., Krawczuk M, Siebert J.: Computing methods for fast and precise body surface area estimation of selected body parts. 2018 International Interdisciplinary PhD Workshop (IIPhDW 2018), Swinoujscie; Poland, May 9-12, pp. 316-318.	-/-/0	2018
4.	Redlarski G., Krawczuk M., Kupczyk A., Piechocki J., Ambroziak D., Palkowski A.: Swarm-Assisted Investment Planning of a Bioethanol Plant. Polish Journal of Environmental Studies. Vol. 26, No. 3, 1203-1214.	1.12/Q4/3	2017
5.	Redlarski G., Dabkowski M., Palkowski A.: Generating optimal path in dynamic environments using River Formation Dynamics algorithm. Journal of Computational Science 20, 8-16.	1.925/Q2/2	2017

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.	Principal Investigator in a project financed from a grant of the National Science Center in Cracow under the OPUS program, entitled “Methodology for rapid and accurate determination of body surface area” (UMO-2014/15/B/NZ7/01018).	2015	co-PI
2.	Center for Advanced Studies – development of an interdisciplinary doctoral program at the Gdañsk University of Technology in key areas of the Europe 2020 Strategy” (POKL04.03.00-00-238/12), co-financed by the European Social Fund, Human Resources Development Operational Program.	2013	PI

3.	Principal Investigator in a project financed from a grant of the Regional Fund for Environmental Protection and Water Management, entitled "Dedicated system for the automatic synchronization of electric generators in hydroelectric power plants", task No. 018065 (WFOŒD/201/160/2008).	2008	co-PI

Additional relevant information – (no more than 1600 charters)[iv]

I supervised two defended doctoral dissertation:

1. Palkowski A.: Automation of the rehabilitation process for children with cerebral palsy and osteogenesis imperfecta. Gdansk, 2018.
2. Tojza P.M.: Computer-aided analysis of signals from pH-metry and pH-metry with impedance. Gdansk, 2016.

Moreover I supervise another 2 dissertations (years 1 and years 3 of the doctoral studies at the Faculty of Electrical and Control Engineering of the Gdansk University of Technology).

[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 300 words
[iii] Leave only one answer
[iv] Add any other relevant information eg. awards for PHD students whom you supervised (no more than 200 words)