

Prospective supervisor's form

Name of the s

Academic title:

Orcid ID number: [https://orcid.org/0000-](https://orcid.org/0000-0002-9352-9581)

Gdańsk University of Technology Faculty of

Department of

Phone: +48

E-mail:

Personal web page: <https://pg.edu.pl/>

Discipline¹

Optional

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

#

#

#

#

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

Prospective supervisor's form

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

The proposed research is related to oxide and oxy-fluoride glasses and glass-ceramics: their manufacturing and studies of the structure and selected physical properties. In glass-ceramics, the nanostructures should be dispersed in the amorphous structure, in the form of nanocrystals or in the form of metal nanoparticles. Such kind of material should be transparent in a wide range of wavelengths and should be characterized by low energy of phonons as well as chemical resistance and mechanical strength. Glasses and glass-ceramics may have very interesting physical properties, such as high optical non-linearity. In addition, plasmon resonance can be observed in glass ceramics containing metal nanoparticles, which leads to an increase in the intensity of the electromagnetic field around them. Proposed materials can be used in broadly defined optoelectronics or photonics. The following research methods would be used in the research: XRD, SEM, TEM, DSC, XPS, UV-Vis spectroscopy and luminescence measurements.

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 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.	R. Kozioł, M. Łapiński, P. Syty, D. Koszelow, W. Sadowski, J. E. Sienkiewicz, B. Kościelska, Evolution of Ag nanostructures created from thin films: UV-vis absorption and its theoretical predictions, Beilstein J. Nanotechnol. 11 (2020) 494–507, doi:10.3762/bjnano.11.40	100	2020
2.	M. Walas, M. Lisowska, T. Lewandowski, A.I. Becerro, M. Łapiński, A. Synak, W. Sadowski, B. Kościelska, From structure to luminescence investigation of oxyfluoride transparent glasses and glass-ceramics doped with Eu ³⁺ /Dy ³⁺ ions, Journal of Alloys and Compounds 806 (2019) 1410-1418, doi: https://doi.org/10.1016/j.jallcom.2019.07.017.	100	2019

Prospective supervisor's form

3.	T. Lewandowski, M. Walas, A. Synak, P. Syty, J. E. Sienkiewicz, R. Koziol, M. Łapiński, W. Sadowski, B. Kościelska, Structure, luminescent properties and FDTD simulation of TeO ₂ -BaO-Bi ₂ O ₃ -Ag: Ln ³⁺ glass-ceramics system, Journal of Luminescence 214 (2019) 116539. doi: 10.1016/j.jlumin.2019.116539	70	2019
4.	T. Lewandowski, C. Seweryński, M. Walas, M. Łapiński, A. Synak, W. Sadowski, B. Kościelska, Structural and luminescent study of TeO ₂ -BaO-Bi ₂ O ₃ -Ag glass system doped with Eu ³⁺ and Dy ³⁺ for possible color-tunable phosphor application, Opt. Mater. 79 (2018) 390-396. doi: 10.1016/j.optmat.2018.03.031	70	2018
5.	M. Walas, P. Piotrowski, T. Lewandowski, A. Synak, M. Łapiński, W. Sadowski and B. Kościelska, Tailored white light emission in Eu ³⁺ /Dy ³⁺ doped tellurite glass phosphors containing Al ³⁺ ions, Opt. Mater. 79 (2018) 280-295. doi: 10.1016/j.optmat.2018.03.015	70	2018

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.			PI
2.			PI
3.			PI

Prospective supervisor's form

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)