Correspondence address:

Institute of Metallurgy and Materials Science of the Polish Academy of Sciences, Photovoltaic Laboratory,

43-340 Kozy, 22 Krakowska St.

Phone: (033) 817 42 49, Fax: (033) 4867180

e-mail: k.gawlinska@imim.pl>

Employment and positions:

from 2019 - Assistant professor at the Institute of Metallurgy and Materials Science of the Polish Academy of Sciences
2017 - 2019 - Technologist at Saule Technologies
2016 - 2018 - Researcher at the Center for Research and Development of Technologies for Industry

Scientific career:
M.Sc. - University of Silesia, Faculty of Chemistry, 2014
Ph.D. - Institute of Metallurgy and Materials Science, Polish Academy of Sciences, 2019

Scientific achievements:
The most important publications in the last 5 years:

1.

K. Gawlińska, A. Iwan, Z.Starowicz, G. Kulesza-Matlak, M. Lipinski, B.Boharewicz, I. Tazbir, A. Sikora, Searching of new, cheap, air- and thermally stable hole transporting materials for perovskite solar cells, Opto-Electronics Review, 25, 274- 284, 2017

2.

Z. Starowicz, **K. Gawlińska**, J. Walter, G. Kulesza- Matlak, M. Lipiński, Extended investigation of sol aging effect on TiO2 electron transporting layer and performances of perovskite solar cells, Materials Research Bulletin, 99, 136-143, 2017

3.

M. Lipiński, R. Socha, A. Kędra, **K. Gawlińska**, G. Kulesza - Matlak, Ł. Major, K.Drabczyk, K. Łaba, Z. Starowicz, K. Gwóźdź, A.Góral, E. Popko, Studying of perovskite nanoparticles in PMMA matrix used as light converters for silicon solar cel, Archives of Metallurgy and Materials 62,3, 17331-1739, 2017

4.

Z. Starowicz, A. Kędra, **K. Gawlińska**, R. Socha. G. Kulesza Matlak, K. Berent, K. Gwóźdź, E. Zielony, E. Popko, M. Lipiński, Influence of Ag nanoparticles microstructure on their optical and plasmonic properties for photovoltaic applications, Solar Energy Materials and Solar Cells 158, 610-616, 2017

5.

K. Gawlińska, K. Drabczyk, Z. Starowicz, P. Sobik, P. Zięba, Determination of EVA cross-linking degree after lamination process by extraction and optical transmission measuring, Archives of Metallurgy and Materials, 63, 2, 833-838, 2018

6.

Z. Starowicz, K. Drabczyk, **K. Gawlińska**, P. Zięba, Metrological aspects of evaluation of photovoltaic glasses in the laboratory scale, Metrology and Measurement Systems, 25, 1, 203-211, 2018

7.

G. Kulesza - Matlak, **K. Gawlinska**, Z. Starowicz, A. Sypien, K. Drabczyk, B. Drabczyk, M. Lipinski, P. Zieba, Black silicon obtained in two-step short wet etching as a texture for silicon solar cells - surface microstructure and optical properties studies, Archives of Metallurgy and Materials 63, 2, 1009-1017, 2018

8.

K. Gawlińska - Nęcek, Z. Starowicz, D. Tavgeniene, G. Krucaite, S. Grigalevicius, E. Schab - Balcerzak, M. Lipiński, A solution-processable small-organic molecules containing carbazole or phenoxazine structure as hole-transport materials for perovskite solar cells, Opto-Electronics Review, 27, 2, 137-142, 2019

9.

Z.Starowicz, **K.Gawlińska-Nęcek**, M.Bartmański, M.Wlazło, T.Płociński, B.Adamczyk-Cieślak, G.Putynkowski, P.Panek; Investigation of the Zn and Cu oxides for heterojunction thin film solar cell application; Microelectronic Engineering, 221, 2020, 111196

10.

M. Musztyfaga-Staszuk, **K. Gawlińska-Nęcek**, D. Janicki, P. Panek, Laser assisted copper oxidation, Arch. Metall. Mater. 65, 2, 767-770, 2020

11.

M. Musztyfaga-Staszuk, D. Janicki, P. Panek, **K. Gawlińska-Nęcek**, Preparation and

characterization of copper oxide sheets using different wavelengths of IR lasers, Materials, 13, 3794, 2020

12.

Z. Starowicz, **K. Gawlińska** - Nęcek, R.P Socha, T. Płociński, J. Zdunek, M.J. Szczerba, P. Panek, Materials studies of copper oxides obtained by simple, low temperature oxidation of copper sheets, Materials Science in Semiconductor Processing, 105368, 2021

13.

K. Gawlińska-Nęcek, P. Panek, Z.Starowicz, R. P. Socha, G. Putynkowski, M. K. Stodolny, B. B. Van Aken, The use of copper in solar cells and modules, 37th EU PVSEC-Proceedings, 2020, 25-28, DOI: 10.4229/EUPVSEC20202020-1AO.3.1

Participation in research projects:
Projects of the National Science Center:

1.

"*Study of the effect of nanoparticles of metals and semiconductors for optoelectronic properties of composite materials* ", DEC-2012/05/B/ST8/00087, 2015 - 2016, Contractor

Projects of the National Center for Research and Development

1.

"*In-line processing of n+/p and p/p+ junction systems for cheap photovoltaic module production*" , POLNOR / 199380/89/2014, 2015 - 2016, Contractor

2.

"*Photovoltaic and isothermal car body*", GEKON2/04/266475/6/2015, 2016-2017, Contractor

3.

"*Development of technology for the production of copper component and pastes used in the manufacture of silicon cells electrical contacts* ", POIR.01.01.01-00-1598 / 15-00, 2016 - 2017, Contractor

4.

"Development of a universal transparent electrode for applications in I, II and III generation photovoltaic cells", RPMA.01.02.00-14-5702/16, 2017, Contractor

5.

"*Development of a hybrid photovoltaic solar cell*", POIR.01.01.01-00-1022/16-00, 2017, Contractor

6.

"*Translucent single-junction photovoltaic cells and high-efficiency, opaque tandem cells based on perovskite materials for BIPV and BAPV applications* ", POIR.01.02.00-00-0309 / 16, 2017-2018, Technologist

7.

"*Development of technology for manufacturing of functional materials for application in non-silicon photovoltaic cells* ", TECHMATSTRATEG II No. 409122 FANPV, 2019 - 2021, Contractor

Scientific experience gained at home and abroad:

2016 - Scientific internship, SINTEF Stiftelsen for Industriell og Teknisk Forskning ved Norges Tekniske Høgskole, Trondheim (Norway) - 2 weeks

2017 - Scientific internship, French National Center for Scientific Research - ICube Laboratory, Strasbourg (France) - 1.5 months

Main scientific interests:

Thin-film photovoltaic solar cells based on oxide and perovskite semiconductors;
III generation solar cells;
Transparent conductive oxides for use in solar cells;
Effective doping of semiconductor oxides.