



ACADEMIC TEACHER PROFESSIONAL EXPERIENCE

DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

1. Basic information

Name, surname:	Katarzyna Matczyszyn
Grade / Title:	Dr hab. inż., prof. PWr
Scientific discipline	nauki chemiczne / chemical sciences
Faculty:	W3 Wydział Chemiczny / Faculty of Chemistry
Email address:	Katarzyna.matczyszyn@pwr.edu.pl
Link to home page and/or research profiles (Google Scholar, ResearchGate, etc.)	Biophotonics.pwr.edu.pl

2. Publication record

Up to 10 most important papers published over the period of previous 10 years.

No.	Description (authors, publication title, journal / conference, DOI)	Publication year
1.	Marta Piksa, Wojciech Fortuna, Cheng Lian, Małgorzata Gacka, Ifor D. W. Samuel, Katarzyna Matczyszyn & Krzysztof J. Pawlik Treatment of antibiotic-resistant bacteria colonizing diabetic foot ulcers by OLED induced antimicrobial photodynamic therapy Scientific Reports, 2023, 13(1), 14087 https://doi.org/10.1038/s41598-023-39363-4	2023
2.	Krzysztof Nadolski, Christian Jonin, Estelle Salmon, Zacharie Behel, Katarzyna Matczyszyn, Pierre-Francois Brevet Sensitivity of gold nanoparticles second harmonic scattering to surrounding medium change. Journal of Molecular Liquids. 2023, vol. 388, art. 122704, s. 1-7.	2023
3.	Marta Piksa, Cheng Lian, Imogen C. Samuel, Krzysztof Pawlik, Ifor D. W. Samuel, Katarzyna Matczyszyn The role of the light source in antimicrobial photodynamic therapy. Chemical Society Reviews. 2023, vol. 52, nr 5, s. 1697-1722.	2023
4.	Dominika A. Benkowska-Biernacka, S. G. Mucha, Lucyna Firlej, Filip Formalik, Jean-Louis Bantignies, Eric Anglare, Marek Samoć, Katarzyna Matczyszyn Strongly emitting folic acid-derived carbon nanodots for one- and two-photon imaging of lyotropic myelin figures. ACS Applied Materials and Interfaces. 2023, vol. 15, nr 27, s. 32717-32731.	2023
5.	Borui Li, Jacques Lalevee, Leszek M. Mazur, Katarzyna Matczyszyn, Serge Ravaine, Safi Jradi Copper complex-based photoinitiator for high resolution two-photon polymerization. Additive Manufacturing. 2023, vol. 75, art. 103741, s. 1-10.	2023
6.	Dominika Kruszewska-Bąk, Radosław A. Deska, Katarzyna Matczyszyn, Sławomir Szafert, Bartłomiej Pigulski Hybrids of polyyenes and azo dyes: synthesis, characterization, and two-photon absorption. Journal of Physical Chemistry C. 2023, vol. 127, nr 24, s. 11720-11729.	2023



7.	Mucha, S.G., Piksa, M., Firlej, L., Krystyniak, A., Różycka, M.O., Kazana, W., Pawlik, K.J., Samoć, M., Matczyszyn, K. Non-toxic Polymeric Dots with the Strong Protein-Driven Enhancement of One- and Two-Photon Excited Emission for Sensitive and Non-destructive Albumin Sensing. (2022) <i>ACS Applied Materials and Interfaces</i> , 14 (35), pp. 40200-40213.	2022
8.	Chaban, I., Deska, R., Privault, G., Trzop, E., Lorenc, M., Kooi, S.E., Nelson, K.A., Samoc, M., Matczyszyn, K.*, Pezeril, T. Nonlinear Optical Absorption in Nanoscale Films Revealed through Ultrafast Acoustics. (2022) <i>Nano Letters</i> , 22 (11), pp. 4362-4367.	2022
9.	Dudek, M., Kaczmarek-Kędziera, A., Deska, R., Trojnar, J., Jasik, P., Młynarz, P., Samoć, M., Matczyszyn, K. Linear and Nonlinear Optical Properties of Azobenzene Derivatives Modified with an (Amino)naphthalene Moiety. (2022) <i>Journal of Physical Chemistry B</i> , 126 (32), pp. 6063-6073.	2022
10.	Gierlich, P., Mucha, S.G., Robbins, E., Gomes-da-Silva, L.C., Matczyszyn, K., Senge, M.O. One-Photon and Two-Photon Photophysical Properties of Tetrafunctionalized 5,10,15,20-tetrakis(m-hydroxyphenyl)chlorin (Temoporfin) Derivatives as Potential Two-Photon-Induced Photodynamic Therapy Agents. (2022) <i>ChemPhotoChem</i> , 6 (4), art. no. e202100249.	2022

3. Projects and grants

List of the most important 5 projects/grants with basic description including: title, source(s) of funding, name of the call, role in the project (e.g., principal investigator).

1.	Role in the project (e.g., principal investigator, work package leader, etc.)	PI
	Project title	Non-linear properties of organometallic systems for applications in biophotonics
	Sources of funding	National Science Center NCN
	Name of the call	Opus
	Implementation period	2020-2024
2.	Role in the project (e.g., principal investigator, work package leader, etc.)	WPI
	Project title	"Design and photo-optimization of photosensitizers for applications in the protection of human health, food security and the environment or how light can save lives
	Sources of funding	EU
	Name of the call	MSCA ITN
	Implementation period	2018-2023
3.	Role in the project (e.g., principal investigator, work package leader, etc.)	PI
	Project title	NanoSHG: Nanoparticles for non-linear sensorics
	Sources of funding	NAWA



	Name of the call	Polonium
	Implementation period	2019-2022
4.	Role in the project (e.g., principal investigator, work package leader, etc.)	Mentor
	Project title	Molecular insights into hypoxic tumors – for development of targeted cancer therapeutics
	Sources of funding	NCN
	Name of the call	Polonez
	Implementation period	2023-2025
	5.	Role in the project (e.g., principal investigator, work package leader, etc.)
Project title		Hybrid photoactive materials based on liquid crystals and nanoparticles
Sources of funding		NAWA
Name of the call		Polonium
Implementation period		2014-2018

4. International experience

Brief description of international cooperation and experience (e.g., research stays, cooperation with foreign entities, coordination or participation in international projects or programmes, keynote speeches and presentations delivered at renowned international conferences, visiting professor stays, invited lectures).

No.	Description	Year(s)
1.	Affiliated member of WPI SKCM2 University of Hiroshima, Japan	Since 2023
2.	Visiting Professor at Centro Nazionale de la Ricerca, Istituto di scienze applicate e sistemi intelligenti in Pouzzoli, Italy.	Since 2017
3.	Visiting professor University of Colorado, Boulder, USA	02.2023
4.	Visiting professor Australian National University, Canberra, Australia	03.2022
5.	Visiting researcher Institute de Nanoscience de Paris, France	06-09.2012
6.	Aattaché temporaire d'enseignement et de recherche (ATER); Département de Chimie, Laboratoire de Photophysique et Photochimie Supramoléculaires et Macromoléculaires, Ecole Normale Supérieure de Cachan, France.	2010-2011
7.	Invited Scientist; Laboratoire de Chimie des Polymères, Université Pierre et Marie Curie Paris 6, Paris, France	2005-2006
8.	Postdoctoral Fellow; Laboratoire Cellules et Composants, Commissariat à l'Energie Atomique, Saclay, France.	2004-2005

5. Experience in teaching doctoral students

Brief description of experience in teaching doctoral students (e.g., courses in doctoral schools and PhD studies, summer/winter schools for doctoral students, tutorials, trainings, etc.).

No.	Description	Year(s)
1.	Interdisciplinary seminar on new materials	2018-2021
2.	Reporting seminar	2020-2023
3.		



6. List of supervised doctoral students

List of all supervised doctoral students that defended the PhD including: name of the student, dissertation title, year of awarding PhD.

No.	Name, surname	Dissertation title	Year of awarding PhD
1.	Joanna Olesiak-Banska	Dyes and nanoparticles as markers in two-photon microscopy of liquid crystal DNA systems	2012
2.	Marco Deiana	Linear and nonlinear optical properties of new materials bound to biomolecules	2018
3.	Marta Dudek (Ziemianek)	Synthesis and characterization of new molecular switches with azobenzene motif	2019
4.	Joanna Sobska	Strategies to control biodistribution and activity of new bioactive materials and molecules	2021
5.	Radosław Deska	Photophysical effects in single nanoobjects	2021
6.	Emma Robbins	Design, optimization, and characterization of multi-photon absorption photosensitizers for their potential application in photodynamic therapy	2022
7.	Krzysztof Nadolski	Application of nonlinear optics methods in sensing	2024
8.	Nina Tarnowicz-Staniak	Nanoplasmonics	2024
9.	Dominika Benkowska-Biernacka	Bioimaging of myelin figures	2024

7. Prizes and awards

The most important national and international prizes and awards related to research, development and teaching activities.

No.	Description	Year
1.	Main scientific prize of the French Chemical Society	2023
2.	Docendo discimus WUST prize	2020
3.	ABB's award for the supervisor of the best thesis (Nina Tarnowicz)	2019
4.	Award of the Rector of the Wrocław University of Science and Technology	2018

8. Other significant achievements

Information on other significant achievements related to research, development and teaching activities.

Interest in biophotonics and new materials for non-linear optics including nanoparticles.