



ACADEMIC TEACHER PROFESSIONAL EXPERIENCE

DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

1. Basic information

Name, surname:	Halina Podbielska
Grade / Title:	Prof. dr hab. Eng. PhD MD
Scientific discipline	inżynieria biomedyczna/ biomedical engineering
Faculty:	W11 Wydział Podstawowych Problemów Techniki / Faculty of Fundamental Problems of Technology
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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.	Igor Buzalewicz, Aleksandra M. Kaczorowska*, Wojciech Fijałkowski*, Aleksandra Pietrowska, Anna K. Matczuk*, Halina Podbielska , Alina Wieliczko*, Wojciech Witkiewicz*, Natalia Jędruchniewicz*. Quantifying the dynamics of bacterial biofilm formation on the surface of soft contact lens materials using digital holographic tomography to advance biofilm research. International Journal of Molecular Sciences. 2024, https://doi.org/10.3390/ijms25052653	2024
2.	Halina Podbielska [Red.], Marko Kapalla* [Red.] Predictive, preventive, and personalised medicine: from bench to bedside. Springer, 2023. XIII, ISSN 2211-3495; vol. 17 https://link.springer.com/book/10.1007/978-3-031-34884-6	2023
3.	Agnieszka Rusak*, Igor Buzalewicz, Monika Mrozowska*, Benita Wiatrak*, Katarzyna Haczekiewicz-Leśniak*, Mateusz Olbromski*, Alicja Kmiecik*, Edward Krzyżak*, Aleksandra Pietrowska, Jakub Moskal*, Marzenna Podhorska-Okołów*, Halina Podbielska , Piotr Dzięgiel*. Multimodal study of CHI3L1 inhibition and its effect on angiogenesis, migration, immune response and refractive index of cellular structures in glioblastoma. Biomedicine & Pharmacotherapy. 2023, https://doi.org/10.1016/j.biopha.2023.114520	2023
4.	Przemysław S. Sareło, Beata Sobieszcańska*, Edyta Wysokińska*, Marlena E. Gąsior-Głogowska, Wojciech Kałas*, Halina Podbielska , Magdalena Wawrzyńska*, Marta Kopaczyńska. In vitro examinations of the anti-inflammatory interleukin functionalized polydopamine based biomaterial as a potential coating for cardiovascular stents. Biocybernetics and Biomedical Engineering. 2023, https://doi.org/10.1016/j.bbe.2023.02.001	2023
5.	Agnieszka Dębiec-Bąk*, Anna Skrzek*, Halina Podbielska , Olga Golubnitschaja*, Małgorzata Stefańska*. Superficial temperature	2021



	distribution patterns before and after physical activity in school children are indicative for personalized exercise coaching and disease prevention. EPMA Journal. 2021, https://doi.org/10.1007/s13167-021-00262-1	
6.	Igor Buzalewicz, Magdalena Karwańska*, Alina Wieliczko*, Halina Podbielska. On the application of multi-parametric optical phenotyping of bacterial colonies for multipurpose microbiological diagnostics. Biosensors & Bioelectronics. 2021, https://doi.org/10.1016/j.bios.2020.112761	2021
7.	Igor Buzalewicz, Agnieszka P. Suchwałko*, Magdalena Karwańska*, Alina Wieliczko*, Halina Podbielska. Development of the correction algorithm to limit the deformation of bacterial colonies diffraction patterns caused by misalignment and its impact on the bacteria identification in the proposed optical biosensor. Sensors. 2020, https://doi.org/10.3390/s20205797	2021
8.	Joanna Bauer, Md Nazmul. Hoq*, John Mulcahy*, Syed A. M. Tofail*, Fahmida Gulshan*, Christophe Silien*, Halina Podbielska, Md. Mostofa. Akbar*. Implementation of artificial intelligence and non-contact infrared thermography for prediction and personalized automatic identification of different stages of cellulite. EPMA Journal. 2020, https://doi.org/10.1007/s13167-020-00199-x	2020
9.	Magdalena Wawrzyńska*, Maciej Duda, Edyta Wysokińska*, Leon Strządała*, Dariusz Biały*, Agnieszka Ulatowska-Jarża, Wojciech Kafas*, Sebastian P. Kraszewski, Robert Paślawski*, Paweł Biernat*, Urszula Paślawska*, Aleksandra Zielonka, Halina Podbielska , Marta Kopaczyńska. Functionalized CD133 antibody coated stent surface simultaneously promotes EPCs adhesion and inhibits smooth muscle cell proliferation - a novel approach to prevent in-stent restenosis. Colloids and Surfaces. B, Biointerfaces. 2019, https://doi.org/10.1016/j.colsurfb.2018.11.061	2019
10.	J. Gerard. Wall* [Red.], Halina Podbielska [Red.], Magdalena Wawrzyńska* [Red.] Functionalised cardiovascular stents. Elsevier, cop. 2018. https://shop.elsevier.com/books/functionalised-cardiovascular-stents/wall/978-0-08-100496-8	2018

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.)	Coordinator and leader at WUST
	Project title	EPICSTENT - Antibody-functionalised STENT
	Sources of funding	EU
	Name of the call	Marie Curie Industry-Academia Partnerships and Pathways (IAPP)
	Implementation period	2013-2017
2.	Role in the project (e.g., principal investigator, work package leader, etc.)	Coordinator and leader at WUST
	Project title	Electrically modified biomaterials surface
	Sources of funding	EU
	Name of the call	7. Framework, Nanosciences, Nanotechnologies, Materials and new Production Technologies
	Implementation period	2008 – 2011



3.	Role in the project (e.g., principal investigator, work package leader, etc.)	Coordinator and leader at WUST
	Project title	Sol gel applicators for enhanced laser therapies
	Sources of funding	grant DAAD – MNISW
	Name of the call	International cooperation PL-DE
	Implementation period	2006-2007]
4.	Role in the project (e.g., principal investigator, work package leader, etc.)	Coordinator and leader at WUST
	Project title	Multilayer interferometric spectrometer on the basis of porous silicon
	Sources of funding	Institut für Biomedizinische Technik und Physik (WE09
	Name of the call	Research and Development Project, Charité - Universitätsmedizin Berlin, Campus Benjamin Franklin
	Implementation period	2004-2005
5.	Role in the project (e.g., principal investigator, work package leader, etc.)	
	Project title	
	Sources of funding	
	Name of the call	
	Implementation period	

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	Visiting Professor, A. v. Humboldt Foundation, Technical University of Berlin, Institute of Optics and visiting Professor at the Medicine Charite University Berlin, Campus Benjamin Franklin, Institut für Biomedizinische Technik und Physik	2005
2	Visiting Professor, Technical University of Berlin, Institute of Optics	2002-2004
3	Chair or Co-chair of the SPIE Conferences: Chairing <i>Holography, Interferometry and Optical Pattern Recognition in Biomedicine, Light and Biological Systems, Microscopy, Interferometry and Holography in Medicine, Clinical Applications of Modern Imaging Technologies, Optical and Imaging Techniques in Biomedicine, Optical Biophysics, Optical and Imaging Techniques for Biomonitoring, Biomedical Sensing, Imaging and Tracking Technologies, Coherence Domain Optical Methods in Biomedical Science and Clinical Applications</i>	1990-1997
4	Visiting Scientist, Department of Electronics, Weizmann Institute of Sciences, Rehovoth, Israel	1989-1990
5	Visiting Scientist (1 month), Academy of Science of Russia, Leningrad (today St. Petersburg) and Novosibirsk	1988
6	1 month, research stay in Clinics of Traumatology, University of Muenster	1987



7.	Research Fellow of the Alexander von Humboldt Foundation, Department of Biomedical Biophysics, Throat-Nose-Ear Clinics, University of Muenster, Germany	1985/1986
8.	Research Fellow of the Alexander von Humboldt Foundation at the Institute of Physics, University of Frankfurt/Main	1984/1985
9.	Graduate Research Assistant, Institute of Physics, University of Frankfurt, Frankfurt/Main, Germany, 4 months research stay	1980

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.	New trends in Biomedical Engineering, WUST	Every year since 2020
2.	Summer school for foreign students, Technologies for Preventive, Predictive and Personalized Medicine and Physiotherapy, WUST, manager and lecturer	Summer 2022
3.	Lecture on Preventive, Predictive and Personalized Physiotherapy for PhD students, Wrocław University of Health and Sport Sciences	Several times during the period of 2008-2014
4.	Invited training tutorials on Medical Applications of Holography, Interferometry and Optical Fibers, several times during Photonics West SPIE Conferences	1991, 1992, 1993, 1994

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.	Matthias Rottenkolber	New corneal topographer: Carrier Frequency Deflectometry for High Precision Measurement of Ophthalmic Surfaces - a New Method for Detecting the Corneal Topography	1996
2.	Ewa Boerner	Ocena efektywności laseroterapii metodą podwójnej ślepej próby Evaluation of the effectiveness of double-blind laser therapy	1999
3.	Damian Andrzejewski	Pomiar czasu życia transfotoików metodą dwuczęstotliwościowej modulacji fali wzbudzającej w żol-żelowych czujnikach światłowodowych Measurement of transphotonic lifetime using dual-frequency excitation wave modulation in sol-gel optical fiber sensors	2001



4.	Agnieszka Ulatowska-Jarża	Opracowanie projektu optody enzymatycznej w oparciu o wyniki badań własnych właściwości matryc zol-żelowych Development of an enzymatic optode project based on the results of our own research on the properties of sol-gel matrices	2001
5.	Joanna Bauer	Biometryczne systemy rozpoznania osób na podstawie obrazu termowizyjnego twarzy Biometric systems for recognizing people based on thermal imaging of the face	2004
6.	Iwona Hołowacz	Konstruowanie światłowodowych aplikatorów zol-żelowych do interstycjalnej termoterapii laserowej i badanie ich właściwości Construction of fiber-optic sol-gel applicators for interstitial laser thermotherapy and study of their properties	2006
7.	Katarzyna Wysocka-Król	Wytwarzanie domieszkowanych nanocząstek zol-żelowych i badanie ich właściwości fotofizycznych i biologicznych Production of doped sol-gel nanoparticles and study of their photophysical and biological properties	2012
8.	Igor Buzalewicz	Optyczne techniki identyfikacji bakterii chorobotwórczych Optical techniques for identifying pathogenic bacteria	2013
9.	Elżbieta Szul	Badanie wpływu zmian geometrii i właściwości biomechanicznych rogówki oka po zabiegu laserowej korekcji refrakcji na tonometryczny pomiar ciśnienia wewnątrzgałkowego Study of the influence of changes in the geometry and biomechanical properties of the cornea after laser refractive correction on tonometric measurement of intraocular pressure	2013
10.	Katarzyna Kowal	Nanomateriały z wykorzystaniem związków tytanu do modyfikacji wyrobów włókienniczych o właściwościach antibakteryjnych Nanomaterials using titanium compounds to modify textile products with antibacterial properties	2015
11.	Agnieszka Suchwałko	Zastosowanie analizy statystycznej do identyfikacji bakterii na podstawie widm dyfrakcyjnych kolonii bakterii	2016



		Application of statistical analysis to identify bacteria based on diffraction spectra of bacterial colonies	
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7. Prizes and awards

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

No.	Description	Year
	Honorary Member of The Polish Society of Biomedical Engineering	2022
	Highest Recognition of the European Association for Predictive, Preventive and Personalized Medicine for Exceptional Achievements in International Networking in the field of Biomedical Sciences	2021
	Senior Member of the Optical Society of America for service in Optics and Photonics	2017
	First Prize for two Inventions: Functionalized intravascular stent for interventional cardiology and Innovative identification of bacteria by diffractive methods, 2017, Main Technical. Federation NOT Wrocław Branch, also awarded by distinction by NOT Council	2017
	Special Award of the Wrocław University of Science and Technology Docendo Discimus for outstanding teaching achievements	2016
	Medal of the National Education Commission	2012
	Member The Committee of Biocybernetics and Biomedical Engineering, since 2024 she is a Vice Head of the Committee, PAS	Since 2011
	Siemens Award for <i>Biophotonics as a branch of Biomedical Engineering: application of light for examination of biological and nanomaterials</i> 2011	2011
	Honorary Emblem of the Faculty of Physiotherapy, Wrocław University School of Physical Education, 2010	2010
	Honorary Emblem of the Wrocław University of Technology 2010	2010
	Gold Medal on the 52nd World Exhib. of Innovation, Research and New Technology, Brussels 2003, <i>Development of photodynamic therapy and diagnosis for cancerous and non-cancerous tissues obtained with chlorophyll derivatives and semiconductor laser system, with Prof. W. Stręk's team from PAS.</i>	2003

8. Other significant achievements

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

Prof. Halina Podbielska has served as an expert in grant evaluations for the 6th and 7th Framework Programs, Horizon2020, and currently for Horizon Europe of the European Commission, as well as a grant reviewer for the National Institutes of Health (USA), the Polish Ministry of Science, and the Latvian Council of Science. Since 2008, she has been a member of the Academic Advisory Board and the Biomedical Engineering Representative of the European Association for Predictive, Preventive, and Personalized Medicine (EPMA).

Since 2021, Prof. Podbielska has been a member of the Advisory Team for the Polish Ministry of Science, assessing applications and reports for the "Implementation Doctorate" program.

She has organized and chaired a series of international conferences on Biomedical Optics and Biomedical Engineering and has edited numerous conference proceedings. Her professional experience spans biomedical engineering, with a focus on medical applications of optics,



nanomaterials, and personalized medicine. She has authored or co-authored over 400 publications and holds 13 registered patents related to biomedical technologies and personalized medicine, some of which have been commercially implemented.

At Wrocław University of Science and Technology (WUST), she led nine grants funded by the Ministry of Science, seven of which were carried out by PhD students. Since 2023, she has held the honorary title of Professor Magnus at WUST.

She is a member of the Editorial Board of the EPMA Journal (Springer) and Biocybernetics and Biomedical Engineering Journal (Elsevier). She is also a member of the Scientific Council of the Institute of Biocybernetics and Biomedical Engineering of Polish Academy of Science, Warsaw and Board Member of the International Centre for Biocybernetics, Warsaw.