



ACADEMIC TEACHER PROFESSIONAL EXPERIENCE

DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

1. Basic information

Name, surname:	Rafał Walczak
Grade / Title:	Prof.
Scientific discipline	automatyka, elektronika, elektrotechnika i technologie kosmiczne / control, electronic, electrical engineering and space technologies
Faculty:	W12 Wydział Elektroniki, Fotoniki i Mikrosystemów / Faculty of Electronics, Photonics and Microsystems
Email address:	rafal.walczak@pwr.edu.pl
Link to home page and/or research profiles (Google Scholar, ResearchGate, etc.)	

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.	Bartosz Kawa, Patrycja J. Śniadek, Rafał Walczak, Jan Dziuban Nanosatellite payload for research on seed germination in a 3D printed micropot. <i>Sensors</i> . 2023, vol. 23, nr 4, art. 1974, s. 1-12.	2023
2.	Bartosz Kawa, Chengkuo Lee*, Rafał Walczak Inkjet 3D printed MEMS electromagnetic multi-frequency energy harvester. <i>Energies</i> . 2022, vol. 15, nr 12, art. 4468, s. 1-11.	2022
3.	Aleksandra Pokrzywnicka, Patrycja J. Śniadek, Rafał Walczak Glass micropism matrix for fluorescence excitation in lab-on-a-chip platforms. <i>Journal of Micromechanics and Microengineering</i> . 2021, vol. 31, nr 12, art. 125009, s. 1-12.	2021
4.	Jianxiong Zhu*, Zhongda Sun*, Jikai Xu*, Rafał Walczak, Jan Dziuban, Chengkuo Lee* Volatile organic compounds sensing based on Bennet doubler-inspired triboelectric nanogenerator and machine learning-assisted ion mobility analysis. <i>Science Bulletin</i> . 2021, vol. 66, nr 12, s. 1176-1185.	2021
5.	Bartosz Kawa, Krzysztof Śliwa, Vincent Ch. Lee*, Qiongfeng Shi*, Rafał Walczak Inkjet 3D printed MEMS vibrational electromagnetic energy harvester. <i>Energies</i> . 2020, vol. 13, nr 11, art. 2800, s. 1-10.	2020
6.	Rafał Walczak, Bartosz Kawa, Krzysztof Adamski Inkjet 3D printed microfluidic device for growing seed root and stalk mechanical characterization. <i>Sensors and Actuators. A, Physical</i> . 2019, vol. 297, art. 111557, s. 1-6.	2019
7.	Rafał Walczak, Krzysztof Adamski, Wojciech Kubicki Inkjet 3D printed modular microfluidic chips for on-chip gel electrophoresis. <i>Journal of Micromechanics and Microengineering</i> . 2019, vol. 29, nr 5, s. 1-7.	2019



8.	Qiongfeng Shi* , Chunkai Qiu* , Tianyi He* , Fan Wu* , Minglu Zhu* , Jan Dziuban , Rafał Walczak , Mehmet Rasit. Yuce* , Chengkuo Lee* Triboelectric single-electrode-output control interface using patterned grid electrode. <i>Nano Energy</i> . 2019, vol. 60, s. 545-556.	2019
9.	Rafał Walczak , Krzysztof Adamski , Wojciech Kubicki Inkjet 3D printed chip for capillary gel electrophoresis. <i>Sensors and Actuators. B, Chemical</i> . 2018, vol. 261, s. 474-480.	2018
10.	Rafał Walczak , Jan Krüger* , Shane Moynihan* A miniaturised image based fluorescence detection system for point-of-care-testing of cocaine abuse. <i>Measurement Science & Technology</i> . 2015, vol. 26, nr 8, s. 1-15.	2015

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	Technology and properties of monolithic and hybrid vibrational micromechatronic systems developed by 3D printing
	Sources of funding	NCN
	Name of the call	Opus
	Implementation period	2020-2024
2.	Role in the project (e.g., principal investigator, work package leader, etc.)	PI
	Project title	Research on technology and properties of monolithic and hybrid microfluidic structures fabricated by 3D printing of polymers
	Sources of funding	NCN
	Name of the call	Sonata Bis
	Implementation period	2014-2017
3.	Role in the project (e.g., principal investigator, work package leader, etc.)	PI
	Project title	Deformability microcytometry in micromechanical systems with pneumatic actuation and multiparametric image analyse
	Sources of funding	NCN
	Name of the call	Opus
	Implementation period	2016-2019
4.	Role in the project (e.g., principal investigator, work package leader, etc.)	PI
	Project title	Mobile laboratory for environmental sampling and identification of biological samples
	Sources of funding	NCBiR
	Name of the call	
	Implementation period	2011-2014



5.	Role in the project (e.g., principal investigator, work package leader, etc.)	PI
	Project title	ANGELAB – a new genetic laboratory for non-invasive prenatal diagnostics
	Sources of funding	EU FP 7
	Name of the call	
	Implementation period	2012-2017

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.	2 x 1 week in 2019 in National University of Singapore, research works realization	2019
2.	Chongqing Jiatong University, visiting professor programme	2017
3.	Lviv Polytechnic, visiting professor programme	2019

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.	Course "Microsystems and microengineering"	2021-2023
2.		
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.	Krzysztof Adamski	Układy mikrofluidyczne wykonane w technice strumieniowego druku 3D	2019
2.	Wojciech Kosek	Autonomiczny system do parametryzacji ruchu zwierząt z wykorzystaniem czujników MEMS	2020
3.	Aleksandra Pokrzywnicka	Cytometr odkształceniowy typu MEMS do badania deformowalności oocytów zwierzęcych	2021
3.	Danylo Lizantes	Analiza obrazowa do wieloparametrycznej charakteryzacji komórek w układach mikrofluidycznych	2022

7. Prizes and awards



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

No.	Description	Year
1.	Polish Award of Intelligent Development in "Scientists of the future"	2019
2.	Outstanding paper award PowerMEMS 2018, Daytona Beach, USA	2018
3.	Award for ANGELAB project during European Nanoelectronics Forum	2016

8. Other significant achievements

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