Wrocław University of Science and Technology
Doctoral School

ACADEMIC TEACHER PROFESSIONAL EXPERIENCE

DOCTORAL SCHOOL OF WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

1. Basic information

Name, surname:	Andrzej Żak
Grade / Title:	Dr hab. inż., prof. PWr
Scientific discipline	**inżynieria materiałowa / materials engineering**
Faculty:	W3 Wydział Chemiczny / Faculty of Chemistry
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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.	Andrzej M. Żak✉, Anna Wieczorek, Agnieszka E. Chowaniec-Michalak, Łukasz Sadowski: Segmentation of pores within concrete-epoxy interface using synchronous chemical composition mapping and backscattered electron imaging, Measurement (London). 2023, vol. 206, art. 112334, s. 1-7, DOI: 10.1016/j.measurement.2022.112334	2023
2.	Andrzej M. Żak✉, Anna Wieczorek, Agnieszka E. Chowaniec-Michalak, Łukasz Sadowski: Segmentation of pores in cementitious materials based on backscattered electron measurements: a new proposal of regression-based approach for threshold estimation, Construction and Building Materials, 2023, vol. 368, art. 130419, s. 1-7, DOI: 10.1016/j.conbuildmat.2023.130419	2023
3.	Andrzej M. Żak✉: Light-induced in situ transmission electron microscopy-development, challenges, and perspectives, Nano Letters. 2022, vol. 22, nr 23, s. 9219-9226, DOI: 10.1021/acs.nanolett.2c03669	2022
4.	Andrzej M. Żak✉, Olga Kaczmarczyk: Comment on "Unveiling the antibacterial mechanism of gold nanoclusters via in situ transmission electron microscopy", ACS Sustainable Chemistry & Engineering. 2022, vol. 10, nr 32, s. 10440-10441, DOI: 10.1021/acssuschemeng.2c02333	2022
5.	Margarita D. Bambach, Łukasz Szczepański, Andrzej M. Żak✉: In Situ and Ex Situ TEM analysis of the copper precipitation in martensitic steel, Metallurgical and Materials Transactions. A. Physical Metallurgy and Materials Science. 2022, vol. 53, s. 1145-1149, DOI: 10.1007/s11661-021-06561-6	2022

6.	Adrian Matusiak, Andrzej M. Żak✉: Affordable open-source quartz microbalance platform for measuring the layer thickness, Sensors. 2022, vol. 22, nr 17, art. 6422, s. 1-14, DOI: 10.3390/s22176422	2022
7.	Andrzej M. Żak✉, Olga Kaczmarczyk, Marta Piksa, Jakub Grzęda, Katarzyna Matczyszyn: Fiber-optic sample illuminator design for the observation of light induced phenomena with transmission electron microscopy in situ: Antimicrobial photodynamic therapy, Ultramicroscopy. 2021, vol. 230, art. 113388, s. 1-5, DOI: 10.1016/j.ultramic.2021.113388	2021
8.	Andrzej M. Żak✉, Olga Kaczmarczyk, Marta Piksa, Katarzyna Matczyszyn: Light-induced in situ transmission electron microscopy: novel approach for antimicrobial photodynamic therapy imaging, Photodiagnosis and Photodynamic Therapy. 2021, vol. 35, art. 102463, s. 1-4, DOI: 10.1016/j.pdpdt.2021.102463	2021
9.	Andrzej M. Żak✉: Guide to controlling the electron dose to improve low-dose imaging of sensitive samples, Micron. 2021, vol. 145, art. 103058, s. 1-5, DOI: 10.1016/j.micron.2021.103058	2021
10.	Aleksandra B. Królicka✉, Andrzej M. Żak, Francisca G. Caballero: Enhancing technological prospect of nanostructured bainitic steels by the control of thermal stability of austenite, Materials & Design. 2021, vol. 211, art. 110143, s. 1-19, DOI: 10.1016/j.matdes.2021.110143	2021

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.)	Principal investigator
	Project title	Obrazowanie procesu adhezji i integracji nanocząstek złota z biofilmem bakterii Staphylococcus aureus w transmisyjnym mikroskopie elektronowym przy pomocy uchwytów preparatowych do próbek ciekłych na bazie azotku krzemu i węgla
	Sources of funding	National Science Centre, NCN
	Name of the call	Miniatura 3
	Implementation period	2019.12.19 – 2020-12.18
2.	Role in the project (e.g., principal investigator, work package leader, etc.)	Principal investigator
	Project title	*Revealing the mechanisms of reversible self-organization of nanocomposite tectons in thermal and light interaction conditions using in situ transmission electron microscopy*
	Sources of funding	The Kosciuszko Foundation
	Name of the call	Exchange Program to the United States
	Implementation period	2022.04.16 – 2022.07.15
3.	Role in the project (e.g., principal investigator, work package leader, etc.)	
	Project title	
	Sources of funding	

	Name of the call	
	Implementation period	
4.	Role in the project (e.g., principal investigator, work package leader, etc.)	
	Project title	
	Sources of funding	
	Name of the call	
	Implementation period	
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.	3-month research stay at Massachusetts Institute of Technology, financed by The Kosciuszko Foundation	2021
2.		
3.		

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.	Author and teacher of the *Practical Electron Microscopy* course, prepared and implemented for the Doctoral School of the Wrocław University of Science and Technology as part of the NAWA Ster InterDocSchool project	2023-2024
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.	Aleksandra Królicka (assistant supervisor)	*Analiza zmian strukturalnych stali bainitycznych w wybranych procesach spajania*	2022

2.			
3.			

7. Prizes and awards

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

No.	Description	Year
1.	Winner of the Scholarship of the Minister of Education and Science for outstanding young scientists (17th edition), in the scientific discipline of materials engineering	2022
2.		
3.		

8. Other significant achievements

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