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:	Marta Huculak-Mączka
Grade / Title:	D.Sc., Ph.D.
Scientific discipline	**inżynieria chemiczna / chemical 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.	Dominik Nieweś, Kinga M. Marecka, Marta Huculak-Mączka. Application of alkaline deep eutectic solvents as a green alternative to the traditional extractants for the isolation of humic substances. ACS Omega. 2024, vol. 9, nr 23, s. 25265-25276. DOI:10.1021/acsomega.4c03033 https://pubs.acs.org/doi/10.1021/acsomega.4c03033	2024
2.	Marta Huculak-Mączka, Maciej Kaniewski, Kinga M. Marecka, Marcin Biegun, Magdalena M. Tymoszewicz, Ewelina Klem-Marciniak, Dominik Nieweś, Krystyna Hoffmann. Evaluation of the simplified method of fulvic fractions extraction from peat and lignite. Journal of Thermal Analysis and Calorimetry. 2023, vol. 148, nr 23, s. 13083-13094. DOI:10.1007/s10973-023-12444-2 https://link.springer.com/article/10.1007/s10973-023-12444-2	2023
3.	Dominik Nieweś, Marta Huculak-Mączka, Magdalena M. Braun-Giwerska, Kinga M. Marecka, Aleksandra Tyc, Marcin Biegun, Krystyna Hoffmann, Józef Hoffmann. Ultrasound-assisted extraction of humic substances from peat: assessment of process efficiency and products' quality. Molecules. 2022, vol. 27, nr 11, art. 3413, s. 1-17. https://www.mdpi.com/1420-3049/27/11/3413 DOI:10.3390/molecules27113413	2022
4.	Maciej Kaniewski, Marta Huculak-Mączka, Jakub T. Zieliński, Marcin Biegun, Krystyna Hoffmann, Józef Hoffmann. Crystalline phase transitions and reactivity of ammonium nitrate in systems containing selected carbonate salts. Crystals. 2021, vol. 11, nr 10, art. 1250, s. 1-19. DOI:10.3390/cryst11101250 https://www.mdpi.com/2073-4352/11/10/1250	2021
5.	Aleksandra Tyc, Dominik Nieweś, Ewa Pankalla, Marta Huculak-Mączka, Krystyna Hoffmann, Józef Hoffmann.	2021

	Anti-caking coatings for improving the useful properties of ammonium nitrate fertilizers with composition modeling using box–Behnken design. Materials. 2021, vol. 14, nr 19, art. 5761, s. 1-16. https://www.mdpi.com/1996-1944/14/19/5761/htm DOI:10.3390/ma14195761	
6.	Ewelina Klem-Marciniak, Marta Huculak-Mączka, Kinga M. Marecka, Krystyna Hoffmann, Józef Hoffmann. Chemical stability of the fertilizer chelates Fe-EDDHA and Fe-EDDHSA over time. Molecules. 2021, vol. 26, nr 7, art. 1933, s. 1-16. https://doi.org/10.3390/molecules26071933	2021
7.	Marta Huculak-Mączka Evaluation of the removal potential of fulvic acids after ultrasounassisted extraction of humic substances from peat. Desalination and Water Treatment. 2020, vol. 199, s. 84-98. https://doi.org/10.5004/dwt.2020.26313	2020
8.	Jakub T. Zieliński, Marta Huculak-Mączka, Maciej Kaniewski, Dominik Nieweś, Krystyna Hoffmann, Józef Hoffmann. Kinetic modelling of cadmium removal from wet phosphoric acid by precipitation method. Hydrometallurgy. 2019, vol. 190, art. 105157, s. 1-6. https://authors.elsevier.com/c/1Zx9l,6wyB5qfs DOI:10.1016/j.hydromet.2019.105157	2019
9.	Marta Huculak-Mączka, Krystyna Hoffmann, Józef Hoffmann. Evaluation of the possibilities of using humic acids obtained from lignite in modern water treatment. Desalination and Water Treatment. 2018, vol. 134, s. 296-304. https://doi.org/10.5004/dwt.2018.23223	2018
10.	Marta Huculak-Mączka, Józef Hoffmann, Krystyna Hoffmann. Evaluation of the possibilities of using humic acids obtained from lignite in the production of commercial fertilizers. Journal of Soils and Sediments. 2018, vol. 18, nr 8, s. 2868-2880. https://doi.org/10.1007/s11368-017-1907-x	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.)	Principal investigator, manager and coordinator of the work of the Wrocław University of Science and Technology team
	Project title	To a Fair, Inclusive, Circular and Healthy cities: Valorisation of phosphogypsum wastes into commercial products through sustainable and circular processes
	Sources of funding	The European Union's Horizon 2020
	Name of the call	Circular economy and bioeconomy sectors (HORIZON-CL6-2023-CIRCBIO-02)
	Implementation period	2024-2028
2.	Role in the project (e.g., principal investigator, work package leader, etc.)	Principal investigator, main author of the grant application, work package leader
	Project title	Development of technological concepts for the economic re-use of horticultural waste mineral wool (No. PBS1/A9/19/2013)

	Sources of funding	The National Centre for Research and Development
	Name of the call	Applied Research Programme (Program Badań Stosowanych – PBS)
	Implementation period	2013-2016
3.	Role in the project (e.g., principal investigator, work package leader, etc.)	Principal investigator
	Project title	Development of the technological process for obtaining calcium fertilizer
	Sources of funding	The European Union from the European Regional Development Fund under measure 1.2C of the Regional Operational Program of the Lower Silesian Voivodeship 2014-2020
	Name of the call	Innovation voucher - grant funding for Lower Silesian enterprises
	Implementation period	2014
4.	Role in the project (e.g., principal investigator, work package leader, etc.)	Principal investigator
	Project title	The decomposition of the apatite structure of phosphorus raw materials by the PAPR method for fertilization purposes
	Sources of funding	The National Science Center
	Name of the call	Research project resulting from competitions submitted by the Ministry of Science and Higher Education to be implemented at the National Science Center in the Exact and Technical Sciences group
	Implementation period	2010-2013
5.	Role in the project (e.g., principal investigator, work package leader, etc.)	Principal investigator
	Project title	Development and implementation of an innovative technology for the production of humic acids from local raw materials
	Sources of funding	The European Regional Development Fund
	Name of the call	The Operational Programme Innovative Economy
	Implementation period	2007-2013

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.	Manager and coordinator of the work of the Wrocław University of Science and Technology team as part of an international consortium (25 partners from from 10 EU countries: universities, research centers, NGOs, SMEs, industries, and local authorities) during the project: To a Fair, Inclusive, Circular and Healthy cities: Valorisation of phosphogypsum wastes into commercial products through sustainable and circular processes. This project has received funding from the European Union's Horizon 2020 research and innovation programme - Circular economy and bioeconomy sectors (HORIZON-CL6-2023-CIRCBIO-02).	2024-2028

2.	Manager and coordinator of the work of the Wrocław University of Science and Technology team as part of an international consortium (KU Leuven (Belgium) as the project leader, INMA Bucharest (Romania) with the company and Wrocław University of Science and Technology with the business partner B-I-P Serwis in developing the project application: "Sustainable Valorization of Waste Mineral Wool" as part of the international ERA-NET Cofund ERA-MIN3 program (Joint Call 2021) covering the financing of projects in the field of Raw materials for Sustainable Development and the Circular Economy.	2021
3.	Month-long internships in Tomas Bata University in Zlin, Faculty of Logistics and Crisis Management, Uherské Hradiště, Czech Republic	2020

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.	Recent research trends in chemical engineering - lecture	2024

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.	Dominik Nieweś - Assistant supervisor	Modeling of technological processes for the extraction of humic acids from peat	2022
2.	Magdalena Braun-Giwerska	The use of natural carbon-bearing materials in useful products' technologies	2024 – in progress

7. Prizes and awards

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

No.	Description	Year
1.	Rector's Award for outstanding achievements related to activities for the University Wrocław University of Science and Technology	2015, 2022
2.	The Bronze Medal for Long Service (by the President of the Republic of Poland)	2022

8. Other significant achievements

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

Member of industrial projects, implementation teams and co-author of several project documentation, e.g.:
- Creation of novel anti-caking agents for nitrogen fertilizers comissioned by Grupa Azoty Zakłady Azotowej Kędzierzyn S.A.

- Possibility of a dolomite use in production of novel fertilizers comissioned by Grupa Azoty Zakłady Azotowej Kędzierzyn S.A.
- Subcontractor in a research project for Grupa Azoty Zakłady Azotowej Kędzierzyn S.A. from The Intelligent Development Operational Programme 2014-2020.
- Development and implementation of an innovative technology for the production of humic acids from local raw materials, LUVENA S.A. Luboń , sale of the patent no. 216479. “A method for producing humic acids from lignite”.
- Development of a technology for obtaining humic and fulvic acids from peat comissioned by AGRO-INWEST sp. z o.o.
- Study of properties of systems containing liquid pH conditioner "Full KONDYCJA".
- Assessment of a waste potassium sulphate obtained from biodiesel as a possible fertilizer component - comissioned by ANWIL S.A.
- Analysis of physicochemical properties of ammonium nitrate based fertilizers comissioned by ORLEN Laboratorium S.A.
- Analysis of obtained fertilizer samples (Salmag z siarką® 2, fertilizer X27N-4S, CAN YARA) in terms of factors that negatively impact their anti-caking properties.