

**REMOVAL OF RADIONUCLIDES AND HEAVY METALS FROM LIQUID
WASTE BY METHODS BASED ON MEMBRANE PROCESSES**

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**LIST OF SCIENTIFIC OR ARTISTIC ACHIEVEMENTS WHICH PRESENT A MAJOR
CONTRIBUTION TO THE DEVELOPMENT OF A SPECIFIC DISCIPLINE**

Warsaw, September 2023

**I. INFORMATION ON SCIENTIFIC OR ARTISTIC ACHIEVEMENTS SET OUT
IN ART. 219 PARA 1. POINT 2 OF THE ACT**

1. Scientific monograph, pursuant to art. 219 para 1. point 2a of the Act - not applicable
2. **Cycle of scientific articles related thematically, pursuant to art. 219 para 1. point 2b of the Act;**

[H01]: L. Fuks, **A. Miśkiewicz**^{*1}, G. Zakrzewska-Kołtuniewicz, Sorption-Assisted Ultrafiltration Hybrid Method for Treatment of the Radioactive Aqueous Solutions. *Chemistry*, **2022**, 4, 1076–1091. DOI: [10.3390/chemistry4030073](https://doi.org/10.3390/chemistry4030073)

IF_{2022/2023}: - / 2.1 MNiSW points: - Number of citations.: 3/1²

[H02]: L. Fuks^{*}, **A. Miśkiewicz**^{*}, I. Herdzik-Koniecko, G. Zakrzewska-Kołtuniewicz. Fly Ash as a Potential Adsorbent for Removing Radionuclides from Aqueous Solutions in an Adsorption-Membrane Assisted Process Compared to Batch Adsorption. *Membranes* **2023**, 13, 572, DOI: [10.3390/membranes13060572](https://doi.org/10.3390/membranes13060572)

IF₂₀₂₃: 4.106 MNiSW points: 100 Number of citations: -

[H03]: **A. Miśkiewicz**^{*}, G. Zakrzewska-Kołtuniewicz, Application of biosorbents in hybrid ultrafiltration/sorption processes to remove radionuclides from low-level radioactive waste. *Desalination and Water Treatment*, **2021**, 242, 47–55, DOI: [10.5004/dwt.2021.27870](https://doi.org/10.5004/dwt.2021.27870)

IF_{2022/2023}: 1.254 / 1.273 MNiSW points: 100 Number of citations: 2/-

[H04]: **A. Miśkiewicz**^{*}, W. Starosta, R. Walczak and G. Zakrzewska-Kołtuniewicz, MOF-Based Sorbents Used for the Removal of Hg²⁺ from Aqueous Solutions via a Sorption-Assisted Microfiltration. *Membranes*, **2022**, 12, 1280, DOI: [10.3390/membranes12121280](https://doi.org/10.3390/membranes12121280)

IF_{2022/2023}: 4.106 / 4.2 MNiSW points: 100 Number of citations: -

¹ * asterisk indicates the corresponding author for the publication concerned;

² Total number of citations based on the Scopus database/number without self-citations.

[H05]: A. Abramowska, D. K. Gajda, K. Kiegiel, A. **Miśkiewicz**, P. Drzewicz, G. Zakrzewska-Kołtuniewicz, Purification of flowback fluids after hydraulic fracturing of Polish gas shales by hybrid methods. *Separation Science and Technology*, **2018**, 53 (8), 1207–1217, DOI: [10.1080/01496395.2017.1344710](https://doi.org/10.1080/01496395.2017.1344710)

IF_{2022/2023}: 1.37 / 2.799 MNiSW points: 25 Number of citations: 7/7

[H06]: A. **Miśkiewicz**^{*}, A. Nowak, J. Pałka, G. Zakrzewska-Kołtuniewicz, Liquid Low-Level Radioactive Waste Treatment Using an Electrodialysis Process. *Membranes*, **2021** 11, 324 p. 1-12, DOI: [10.3390/membranes11050324](https://doi.org/10.3390/membranes11050324)

IF_{2022/2023}: 4.106 / 4.2 MNiSW points: 100 Number of citations: 7/5

[H07]: A. **Miśkiewicz**^{*}, G. Zakrzewska-Kołtuniewicz, E. Dłuska, P. F. Walo, Application of membrane contactor with helical flow for processing uranium ores. *Hydrometallurgy*, **2016**, 163, 108–114, DOI: [10.1016/j.hydromet.2016.03.017](https://doi.org/10.1016/j.hydromet.2016.03.017)

IF_{2022/2023}: 1.933 / 4.217 MNiSW points: 45 Number of citations: 3/3

[H08]: A. **Miśkiewicz**^{*}, G. Zakrzewska-Kołtuniewicz, The application of the radiotracer method for the investigation of the cake layer formation on the membrane surface in the cross-flow flat-sheet membrane module. *Desalination and Water Treatment*, **2018**, 128, 228–235, DOI: [10.5004/dwt.2018.22866](https://doi.org/10.5004/dwt.2018.22866)

IF_{2022/2023}: 1.234 / 1.273 MNiSW points: 100 Number of citations: 3/1

[H09]: A. **Miśkiewicz**^{*}, G. Zakrzewska-Kołtuniewicz, S. Pasieczna-Patkowska, Photoacoustic spectroscopy as a potential method for studying fouling of flat-sheet ultrafiltration membranes. *Journal of Membrane Science*, **2019**, 583, 59-69, DOI: [10.1016/j.memsci.2019.04.048](https://doi.org/10.1016/j.memsci.2019.04.048)

IF_{2022/2023}: 7.183 / 9.5 MNiSW points: 140 Number of citations: 5/5

[H10]: A. **Miśkiewicz**^{*}, G. Zakrzewska-Kołtuniewicz Application of the radiotracer method to study the fouling of tubular microfiltration membranes. *Desalination*, **2022**, 534,115795, DOI: [10.1016/j.desal.2022.115795](https://doi.org/10.1016/j.desal.2022.115795)

IF_{2022/2023}: 9.501 / 9.9 MNiSW points: 200 Number of citations: -

3. List of completed original project, engineering and design, technological or artistic achievements, pursuant to art. 219 para 1. point 2c of the Act - not applicable

II. INFORMATION ON SCIENTIFIC OR ARTISTIC ACTIVITY

1. List of published scientific monographs (including the monographs not mentioned in section I.1) – not applicable

2. List of published chapters in scientific monographs

List of chapters published after the award the PhD degree:

- 1) **A. Miśkiewicz**, G. Zakrzewska-Kołodziej, W. Starosta, Chapter 4 "MOF assisted membrane process for removal of radionuclides and other hazardous elements from aqueous solutions" in UJ Monograph „*Waste PET-MOF-Cleanwater: Waste PET-Derived Metal-Organic Framework (MOFs) as Cost-effective Adsorbents for Removal of Hazardous Elements from Polluted Water*”, Editors: J. Ren, P. Nosizo Nomngongo, Tien-Chien Jen, **2022**, DOI: [10.36615/9781776419463-04](https://doi.org/10.36615/9781776419463-04)
- 2) D. Chmielewska-Śmietanko, **A. Miśkiewicz**, Chapter 3 "Batch, fixed-bed column and hybrid membrane process studies of radiocesium removal from contaminated water by nanocomposite SiEA-KNiFe sorbent", in UJ Monograph „*Waste PET-MOF-Cleanwater: Waste PET-Derived Metal-Organic Framework (MOFs) as Cost-effective Adsorbents for Removal of Hazardous Elements from Polluted Water*”, Eds: J. Ren, P. Nosizo Nomngongo, Tien-Chien Jen, **2022**, DOI: [10.36615/9781776419463-03](https://doi.org/10.36615/9781776419463-03)
- 3) K. Kiegiel, **A. Miśkiewicz**, I. Herdzik-Koniecko, D. Gajda, G. Zakrzewska-Kołodziej „*Perspective of Obtaining Rare Earth Elements in Poland*”, *Lanthanides*, Eds.: Nasser S Awwad i Ahmed T. Mubarak, IntechOpen, London, United Kingdom, **2019** ISBN 978-953-51-5792-2, DOI: [10.5772/intechopen.80743](https://doi.org/10.5772/intechopen.80743)

- 4) K. Kiegiel, **A. Miśkiewicz**, D. Gajda, S. Sommer, S. Wolkowicz, G. Zakrzewska-Kołtuniewicz, “Uranium in Poland: Resources and Recovery from Low-Grade Ores”, *Uranium-safety, resources, separations and thermodynamic calculations*, Ed.: Nasser S Awwad, IntechOpen, London, United Kingdom, **2018**, pp.65-88 (154 pages), ISBN 978-1-78923-118, DOI: [10.5772/intechopen.69413](https://doi.org/10.5772/intechopen.69413)
- 5) G. Zakrzewska-Kołtuniewicz, **A. Miśkiewicz** „Processing of radioactive solutions from the fuel cycle by means of membrane methods” in: „*PET-MOF-CLEANWATER Project*”, Eds.: W. Starosta, B. Sartowska, INCT, Warsaw, Poland, **2020**, ISBN 978-83-946412-3-8
- 6) A. G. Chmielewski, Z. Zimek, M. Siwek, U. Gryczka, **A. Miśkiewicz**, D. Chmielewska-Śmietanko, „New INCT industrial projects under planning and development” in: „*Electron accelerators for research, industry and environment – the INCT perspective*”, Eds.: Andrzej G. Chmielewski & Zbigniew Zimek, Institute of Electronic Systems, Warsaw University of technology, Warsaw **2019**, ISBN 978-83-7814-798-5

List of chapters published prior to the award the PhD degree:

- 1) **A. Miśkiewicz**, G. Zakrzewska-Trznadel, A. Jaworska-Sobczak, „Zastosowanie metody znaczników promieniotwórczych do badań procesów membranowych i aparatów do filtracji membranowej”, „*Membrane and Membrane Processes in Environmental protection*”, *Monografie Komitetu Inżynierii Środowiska, PAN* (in Polish), **2012**, vol. 96, ISBN 978-83-89293-23-7, s.199-210
- 2) A. Jaworska-Sobczak, **A. Miśkiewicz**, G. Zakrzewska-Trznadel, M. Harasimowicz „Koncepcja układu hybrydowego do przerobu ścieków radioaktywnych”, „*Membrane and Membrane Processes in Environmental protection*”, *Monografie Komitetu Inżynierii Środowiska, PAN* (in Polish), **2012**, vol. 96, ISBN 978-83-89293-23-7, s. 181-186
- 3) A. Jaworska, **A. Miśkiewicz**, G. Zakrzewska-Trznadel, N. Uzal, C. Cojocar, „Zastosowanie metody planowania eksperymentów w procesie modyfikacji handlowego

- PVA i do optymalizacji usuwania jonów kobaltu z wodnych roztworów w procesie UF/kompleksowanie”, „*Membrane and Membrane Processes in Environmental protection*”, *Monografie Komitetu Inżynierii Środowiska PAN* (in Polish), **2010**, vol. 65, ISBN 978-83-89293-89-3, s. 207-212
- 4) **A. Miśkiewicz**, G. Zakrzewska-Trznadel, A. Jaworska, A. Dobrowolski, „Zastosowanie technik izotopowych do badania procesów membranowych”, „*Membrane and Membrane Processes in Environmental protection*”, *Monografie Komitetu Inżynierii Środowiska, PAN* (in Polish), **2010**, vol.66, ISBN 978-83-89293-91-6, s.49-59
- 5) **A. Miśkiewicz**, G. Zakrzewska-Trznadel, A. Jaworska, A. Dobrowolski, “Using tracer technique for the investigations of the phenomenon occurring in the membrane modules”, *EMChIE-2010 (6th European Meeting on Chemical Industry and Environment), Conference proceedings*, Vol. 2 (Eds R. Dewil, L. Appels, A. Hulsmans), **2010**, s. 1249-1257, ISBN 9789081548601, Mechelen, Belgium
- 6) A. Jaworska, N. Uzal, **A. Miśkiewicz**, G. Zakrzewska-Trznadel, C. Cojocar. “Experimental design approach applied for synthesis of sulfonated PVA polymers and optimisation of complexation-ultrafiltration process for removal of cobalt ions from water solutions”, *EMChIE-2010 (6th European Meeting on Chemical Industry and Environment), Conference proceedings*, Vol. 1 (Eds. R. Dewil, L. Appels, A. Hulsmans), **2010**, s. 185-190, ISBN 9789081548601, Mechelen, Belgium
- 7) C. Cojocar, G. Zakrzewska-Trznadel, M. Harasimowicz, A. Jaworska, **A. Miśkiewicz**, Optimization of polymer enhanced membrane filtration in helical apparatus, VII Scientific Conference of Environment Engineering 4-7 June 2008, Ustroń, „*Membrane and Membrane Processes in Environmental protection*”, *Monografie Komitetu Inżynierii Środowiska, PAN* (in Polish), **2008**, vol. 49 ISBN 83-8929, s. 359-363
3. Information about membership in editorial boards preparing scientific monographs for publication - not applicable.

4. List of articles published in scientific journals (including the articles not mentioned in section I.2).

The following articles are not listed in point 1.2.

List of articles published after the award the PhD degree:

- 1) **A. Miśkiewicz**, D. Chmielewska-Śmietanko, T. Smoliński, Dekarbonizacja energetyki opartej na węglu w Polsce poprzez zastosowanie modułowych reaktorów jądrowych. *Bezpieczeństwo Jądrowe i Ochrona Radiologiczna (BJOR)*, (in Polish), Nr 1, **2023**, p. 47-55
MNSW points: 40
- 2) A. Boettcher, A. Celińska, M. Frelek-Kozak, M. Migdal, M. P. Dąbrowski, P. Sęktas, A. Sidło, G. Zakrzewska-Kołtuniewicz, D. Wawszczak, M. Brykała, K. Kiegiel, **A. Miśkiewicz**, L. Fuks, I. Herdzik-Koniecko, E. Chajduk, W. Starosta, T. Smoliński, M. Rogowski, A. Pawelec, *The Gospostrateg-HTR project results, POSTĘPY TECHNIKI JĄDROWEJ, INCT*, (in Polish), Vol. 66. Z.1, **2023**, p. 9-19
MNSW points: 20
- 3) L. Fuks, I. Herdzik-Koniecko, K. Kiegiel, **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, Methods of Thermal Treatment of Radioactive Waste. *Energies*, **2022**, 15, 375, DOI: [10.3390/en15010375](https://doi.org/10.3390/en15010375)
IF: 3.252 MNiSW points: 140 No of citations: 3/3
- 4) A. Miśkiewicz, Na ścieżce dekarbonizacji „Coal-To-Nuclear” – nowy projekt w ramach programu GOSPOSTRATEG. *Postępy Techniki Jądrowej*, (in Polish), VOL. 65 Z. 3 **2022**
- 5) A. Markowska-Radomska, E. Dłuska, G. Zakrzewska-Kołtuniewicz, **A. Miśkiewicz**: Odzysk metali ziem rzadkich z roztworów po ługowaniu magnesów trwałych w

procesie zintegrowanym z wykorzystaniem emulsyjnych membran ciekłych. *Inż. Ap. Chem.*, **2017**, 56, 4, 128-129

- 6) C. Mays, J. Valuch, C. Condy, **A. Miśkiewicz**, G. Zakrzewska, M. Constantin, D. Diaconu, I. Daris, M. Kralj, N. Železnik, T. Perko, Looking for citizen-centered communication: Dialogues between radiological protection or nuclear safety specialists and media professionals. *J. Radiol. Prot.* **2016**, 36, S143–S159, DOI: [10.1088/0952-4746/36/2/S143](https://doi.org/10.1088/0952-4746/36/2/S143)

IF: 1.657 MNiSW points: 25 No of citations: 7/7

- 7) W. Olszewska, **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, L. Lankof, L. Pająk, Multibarrier system preventing migration of radionuclides from radioactive waste repository. *Nukleonika*, **2015**, 60(3), 557-563, DOI: [10.1515/nuka-2015-0103](https://doi.org/10.1515/nuka-2015-0103)

IF: 0.546 MNiSW points: 15 No of citations: 8/8

- 8) K. Kiegiel, G. Zakrzewska-Kołtuniewicz, D. Gajda, **A. Miśkiewicz**, A. Abramowska, P. Bieluszka, B. Danko, E. Chajduk, S. Wołkowicz, Dictyonema black shale and Triassic sandstones as potential sources of uranium. *Nukleonika*, **2015**, 60(3), 515-522, DOI: [10.1515/nuka-2015-0096](https://doi.org/10.1515/nuka-2015-0096)

IF: 0,546 MNiSW points: 15 No of citations: 5/5

List of articles published prior to the award the PhD degree:

- 1) **A. Miskiewicz**, G. Zakrzewska-Trznadel, Investigation of hydrodynamic behavior of membranes using radiotracer techniques. *EPJ Web of Conferences*, **2013**, 50, 01005
- 2) G. Zakrzewska-Trznadel, M. Harasimowicz, **A. Miskiewicz**, A. Jaworska-Sobczak, Liquid Low-level Radioactive Waste Treatment by Membrane Processes. *Mater. Res. Soc. Symp. Proc.* **2012**, Vol. 1475, Materials Research Society, DOI: [10.1557/opl.2012.643](https://doi.org/10.1557/opl.2012.643), pp. 623-628

- 3) **A. Miśkiewicz**, G. Zakrzewska-Trznadel, A. Dobrowolski, A. Jaworska-Sobczak
Using tracer methods and experimental design approach for examination of hydrodynamic conditions in membrane separation modules. *Appl. Rad. Isot.* **2012**, 70, 837-847, DOI: [10.1016/j.apradiso.2012.02.033](https://doi.org/10.1016/j.apradiso.2012.02.033)
IF: 0.999 MNiSW points: 25 No of citations: 11/6

- 4) E. Cicek, C. Cojocar, G. Zakrzewska-Trznadel, M. Harasimowicz, **A. Miśkiewicz**,
Response Surface Methodology for the Modeling of ⁸⁵Sr Adsorption on Zeolite 3A and Pumice. *Environ. Technol.* **2012**, Vol. 33, 1, 51-59, DOI: [10.1080/09593330.2010.549514](https://doi.org/10.1080/09593330.2010.549514)
IF: 1.007 MNiSW points: 15 No of citations: 10/10

- 5) N. Uzal, A. Jaworska, **A. Miśkiewicz**, G. Zakrzewska-Trznadel, C. Cojocar,
Optimization of Co²⁺ ions removal from water solutions via polymer enhanced ultrafiltration with application of PVA and sulfonated PVA as complexing agents. *J. Colloid Interf. Sci.* **2011**, 362, 615–624, DOI: [10.1016/j.jcis.2011.06.072](https://doi.org/10.1016/j.jcis.2011.06.072)
IF: 3.066 MNiSW points: 30 No of citations: 25/23

- 6) **A. Miśkiewicz**, S. Velizarov, Effect of molecular mass on boron-doped diamond anodic mineralization of water-soluble organic polymers. *Sep. Purif. Technol.* **2011**, 83, 166-172, DOI: [10.1016/j.seppur.2011.09.032](https://doi.org/10.1016/j.seppur.2011.09.032)
IF: 2.879 MNiSW points: 40 No of citations: 2/2

- 7) C. Cojocar, G. Zakrzewska-Trznadel, **A. Miśkiewicz**, Removal of cobalt ions from aqueous solutions by polymer assisted ultrafiltration using experimental design approach Part 2: Optimization of hydrodynamic conditions for a crossflow ultrafiltration module with rotating part. *J. Haz. Mat.* **2009**, 169, 610–620, DOI: [10.1016/j.jhazmat.2009.03.148](https://doi.org/10.1016/j.jhazmat.2009.03.148)
IF: 4.144 MNiSW points: 32 No of citations: 31/27

- 8) G. Zakrzewska-Trznadel, M. Harasimowicz, **A. Miśkiewicz**, A. Jaworska, E. Dłuska, S. Wroński, Reducing fouling and boundary-layer by application of helical flow in ultrafiltration module employed for radioactive wastes processing. *Desalination* **2009**, 240, 108-116, DOI: [10.1016/j.desal.2007.10.091](https://doi.org/10.1016/j.desal.2007.10.091)
IF: 2.034 MNiSW points: 27 No of citations: 22/15
- 9) A. Sporzyński, **A. Miśkiewicz**, B. Gierczyk, G. Schroeder, B. Brzeziński Polyoxoalkyl esters of phenylboronic acids as a new podands. *J. Molecul. Struct.* **2006**, 791, 11-116, DOI: [doi:10.1016/j.molstruc.2006.01.013](https://doi.org/10.1016/j.molstruc.2006.01.013)
IF: 1.599 MNiSW points: 15 No of citations: 9/9
- 10) A. Soprzyński, T. Hofman, **A. Miśkiewicz**, A. Strutyńska, L. Synoradzki, Vapor-Liquid Equilibrium and Density of the Binary System 1-Phenylethylamine + Toluene., *J. Chem. Eng. Data*, **2005**, 50, 33-35, DOI: [10.1021/je0499059](https://doi.org/10.1021/je0499059)
IF: 2.089 MNiSW points: 24 No of citations: 4/4
- 11) B. Zarychta, K. Ejsmond, M. Bujak, J. Zaleski, A. Sporzyński, **A. Miskiewicz**, A. Strutyńska, J. Serwatowski, 3-Formyl-2-furanoboronic acid: X-ray and DFT studies. *Acta Crystallographica, Section E* **2004**, E60, o1925-o1927, DOI: [10.1107/S1600536804023293](https://doi.org/10.1107/S1600536804023293)
IF: 0.413 MNiSW points: 7 No of citations: 2/2
5. List of project, engineering and design as well as technological achievements (including the achievements not mentioned in section I.3) - not applicable.
6. List of public realizations of works of art (including the works not mentioned in section I.3) - not applicable.
7. **Information on presentations given at national or international scientific or arts conferences, including a list of lectures delivered upon invitation and plenary lectures.**

Papers, speeches, seminars, scientific and technical conferences after the award the PhD degree

The results presented in the form of oral presentations **at national** seminars and scientific and technical conferences (only presentation in that I was the presenting author are listed):

- 1) **A. Miśkiewicz**, D. Chmielewska-Śmietanko, T. Smoliński, G. Zakrzewska-Kołtuniewicz, A.G. Chmielewski, Analiza wymagań dotyczących bezpieczeństwa jądrowego procesu dekarbonizacji energetyki zawodowej w Polsce poprzez zastosowanie reaktorów jądrowych”, Konferencja inauguracyjna projektu DEsire: „Plan dekarbonizacji krajowej energetyki zawodowej na drodze modernizacji z wykorzystaniem reaktorów jądrowych”, Centrum Edukacyjno-Kongresowe Politechniki Śląskiej, 12.05.2022, Gliwice
- 2) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, Application of bio-sorbents in UF/sorption hybrid processes for removal of selected radionuclides from low-level radioactive waste, 13th Scientific Conference Membranes And Membrane Processes In Environmental Protection (MEMPEP), 10 –11 czerwca 2021, Gliwice, online;
- 3) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz: „Badanie foulingu membran przy użyciu radioznaczników”, (Investigation of membrane fouling with the application of radiotracers), XII Konferencja Naukowa “Membrany i Procesy Membranowe w Ochronie Środowiska” (MEMPEP 2018) 13 - 16 June 2018, Zakopane
- 4) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, M.Antoszewski, M. Plich, K. Iwińska; „Implementation of the Polish Nuclear Power Programme – a study of socioeconomic effects”, NUTECH 2017-„International Conference on Development and Applications of Nuclear Technologies”, 10-13 September 2017, Kraków

The results presented in the form of oral presentations **at international** seminars and scientific and technical conferences (only presentation in that I was the presenting author are listed):

- 1) **A. Miśkiewicz**, D. Chmielewska-Śmietanko, T. Smoliński, G. Zakrzewska-Kołtuniewicz, A.G. Chmielewski, The Process of Decarbonization of the Domestic Power Industry in Poland using SMR Reactors – Issues related to spent fuel as one of the parameters determining the choice of technology, Technical Meeting on Back End of the Fuel Cycle Considerations for Small Modular Reactors, Hybrid Event, IAEA, 20–23 September 2022, Vienna
- 2) **A. Miśkiewicz**, K. Kiegiel, I. Herdzik-Koniecko, L. Fuks, G. Zakrzewska- Koltuniewicz, Treatment of Liquid Radioactive Waste Containing Organic Substances, International Conference on Radioactive Waste Management Solutions for a Sustainable Future, 1–5 November 2021, IAEA, Vienna (on-line)
- 3) G. Zakrzewska-Kołtuniewicz, **A. Miśkiewicz**, L. Fuks, MOF assisted membrane process for removal of radionuclides from aqueous solutions, The 2nd Workshop PET-MOF-CLEANWATER, 08 December 2021, (on-line)

The research results presented as posters **at national** seminars and scientific and technical conferences (only presentation in that I was the presenting author are listed):

- 1) **A. Miśkiewicz**, G. Zakrzewska, A. Abramowska, S. Pasieczna-Patkowska, Membrane fouling investigation - a comparison of different techniques. 4th International Conference On Methods And Materials For Separation Processes “Separation Science-Theory And Practice, 4-8 September 2016, Lwówek Śląski
- 2) A. Abramowska, D. K. Gajda, K. Kiegiel, **A. Miśkiewicz**, P. Drzewicz, G. Zakrzewska-Kołtuniewicz, Purification of flowback fluids after hydraulic fracturing of polish gas shales by hybrid methods, 4th International Conference On Methods And Materials For Separation Processes “Separation Science-Theory And Practice, 4-8 September 2016, Lwówek Śląski
- 3) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, Membrany w oczyszczaniu ciekłych odpadów promieniotwórczych – ograniczenia w stosowaniu oraz metody badania niekorzystnych zjawisk, Mądralin – 2015, 24-25 November 2015, Warszawa

The research results presented as posters **at international** seminars and scientific and technical conferences (only presentation in that I was the presenting author are listed):

- 1) **Miśkiewicz**, K. Kiegiel, D. Gajda, G. Zakrzewska-Kołtuniewicz: Recovery of uranium and other valuable metals from phosphate rocks using the membrane contactor, Book of abstracts, p.1030-1031, Euromembrane 2018, 9-13 July 2018, Palacio de Congressos, Valencia, Spain, ISBN: 978-84-09-03247-1
- 2) **A. Miśkiewicz**, S. Pasieczna-Patkowska, G. Zakrzewska-Kołtuniewicz: Study of selected aspect of membrane fouling using photoacoustic spectroscopy, Euromembrane 2018, 9-13 July 2018, Palacio de Congressos, Valencia, Spain
- 3) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, S. Pasieczna-Patkowska, B. Sartowska A study of selected aspects of the membrane fouling phenomena, Chemical Technology and Engineering Conference, 26-30 Jun 2017, Lviv
- 4) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, B. Sartowska, S. Pasieczna-Patkowska; Application of the radiometric method for membrane processes investigation, NUTECH 2017-International Conference on Development and Applications of Nuclear Technologies, 10-13 September 2017, Kraków
- 5) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, S. Pasieczna-Patkowska, A photoacoustic spectroscopy as a potential method used for the membrane fouling investigation, PERMEA 2016 - Membrane Science and Technology Conference of Visegrád Countries, May 15-19, 2016, Prague
- 6) **A. Miśkiewicz**, K. Iwińska, Socio-Economic Impact and Perception Analysis of the Nuclear Power Plant Programme in Poland, The Second International Conference on Risk Perception, Communication and Ethics of Exposures to Ionising Radiation, (RICOMET 2016), 1-3 June, 2016, Bucharest
- 7) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, K. Wójtowicz, Studying the socio-economic effects of implementation of the Polish Nuclear Power Programme, SENIX Conference - The role of Social Sciences in Low-Carbon Energy Mix, 25-27 May 2015, Sztokholm, Sweden
- 8) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, W. Olszewska, Application of natural inorganic sorbents for liquid radioactive waste treatment in hybrid mf/sorption process –

- sorption studies and membrane fouling investigation, The 10th International Congress on Membranes and Membrane Processes ICOM2014, 20-25 July, 2014, Suzhou, China
- 9) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, M. Harasimowicz, W. Olszewska, Hybrid membrane methods for treating liquid radioactive wastes, NUTECH 2014-, Development and Applications of Nuclear Technologies, 21-24 September 2014, Warsaw
 - 10) **A. Miśkiewicz**, G. Zakrzewska-Kołtuniewicz, K. Iwińska, Building a platform for enhanced societal research related to nuclear energy in central and eastern Europe, Nutech 2014– Development and Applications of Nuclear Technologies, 21-24 September 2014, Warsaw
 - 11) **A. Miśkiewicz**, G. Zakrzewska-Trznadel, Helical Contactor for Recovery of Uranium and Associated Metals from Uranium Ores and Radioactive Wastes, American Nuclear Society: 2013 Annual Meeting, June 16–20, 2013, Atlanta, Georgia
 - 12) **A. Miśkiewicz**, G. Zakrzewska-Trznadel, W. Niesłuchowska, M. Harasimowicz, Hybrid UF/sorption and MF/sorption processes using inorganic sorbents for radioactive waste treatment, 6th Membrane Conference of Vysegrad Countries (PERMEA 2013), 15-19 September 2013, Warsaw

Oral presentations of results presented at other conferences (presentations of which I am a co-author):

- 1) L. Fuks, A. Miśkiewicz, G. Zakrzewska-Kołtuniewicz, A. Oszczak, A. Świętkowski, Joanna Fronczyk, Removal of radionuclides from the radioactively contaminated water by sorption and Sorbent Assisted Ultrafiltration, International Nuclear Sciences and Technologies Conference (INTEC-22), 19-22.10.2022; Kuşadası, Turcja (on-line)
- 2) L. Fuks, A. Miśkiewicz, G. Zakrzewska-Kołtuniewicz, L. Maskalchuk, Sorption on inorganic sorbents supported by ultrafiltration - hybrid method for treatment of radioactive liquid waste, International Conference on Radioactive Waste Management Solutions for a Sustainable Future, 1–5 November 2021, IAEA, Vienna, Austria (on-line)
- 3) K. Kiegiel, I. Herdzik-Koniecko, L. Fuks, A. Miśkiewicz, G. Zakrzewska-Kołtuniewicz, Spent fuel and radioactive waste management in the HTGR fuel cycle - polish

- perspective, International Conference on Radioactive Waste Management Solutions for a Sustainable Future, 1–5 November 2021 IAEA, Vienna, Austria (on-line)
- 4) D. Śmietanko-Chmielewska, M. Henczka, A. Miśkiewicz, P. Apel, O. Orelovich, Application of SiAE-KNiFe sorbent for radiocesium removal in three different process configuration: batch, fixed-bed and hybrid membrane process, Nutech-2020, 4-7 October 2020, Warsaw
 - 5) G. Zakrzewska-Kołtuniewicz, A. Miśkiewicz, Processing of radioactive solutions from the fuel cycle by means of membrane methods, The 1st Workshop PET-MOF-CLEANWATER in the frame of PET-MOF-CLEANWATER project, 16.10.2019, Warsaw
 - 6) W. Olszewska, A. Miśkiewicz, G. Zakrzewska, The study of migration of radionuclides in radioactive waste repository surroundings, Technical Workshop, “Installation, Closure and Initial State”, 13-14 May 2014, Aspö, Sweden
 - 7) K. Iwińska, A. Miśkiewicz, G. Zakrzewska-Kołtuniewicz, P. Stankiewicz, Building a platform for enhanced societal research related to nuclear energy in Central and Eastern Europe, 2nd Energy & Society Conference, 4- 6 June 2014, Krakow
 - 8) G. Zakrzewska, K. Kiegiel, D. Gajda, A. Miśkiewicz, P. Bieluszka, K. Frąckiewicz, I. Herdzyk, B. Zielińska, A. Jaworska, K. Szczygłowski, A. Abramowska, W. Olszewska, R. Dybczyński, H. Polkowska-Motrenko, B. Danko, Z. Samczyński, E. Chajduk, J. Chwastowska, I. Bartosiewicz, S. Wołkowicz, J. B. Miecznik, Extraction of uranium from low-grade uranium ores in Poland, International Symposium On Uranium Raw Material For The Nuclear Fuel Cycle: Exploration, Mining, Production, Supply And Demand, Economics And Environmental Issues, 23-27 June 2014, Vienna, Austria,
 - 9) W. Olszewska, A. Miśkiewicz, G. Zakrzewska, The migration of radionuclides in radioactive waste repository surroundings, Geodisposal 2014, 24-26.06, 2014 Manchester, UK
 - 10) G. Zakrzewska, K. Kiegiel, D. Gajda, P. Bieluszka, A. Miśkiewicz, B. Danko, E. Chajduk, S. Wołkowicz, Recovery of valuable metals from the waste deriving from uranium production and processing of secondary materials, SHECHTMAN INTERNATIONAL SYMPOSIUM 2014, 29 June - 4 July 2014, Cancun, Mexico

Poster presentations of results presented at other conferences (presentations of which I am a co-author):

- 1) K. Iwinska, M. Kraszewska, K. Witkowska, A. Miśkiewicz, Social Perception Analysis Of Introducing The Nuclear Power Plant Programme In Poland, XIX ISA World Congress Of Sociology – Power, Violence And Justice: Reflections, Responses And Responsibilities, July 15-21, 2018, Toronto, Canada
- 2) D. Gajda, A. Miśkiewicz, K. Kiegiel and G. Zakrzewska-Kołtuniewicz, Purification and volume reduction of liquid radioactive waste with using hybrid methods, ENYGF2017 - "Innovation in Nuclear: a Rich Heritage and our Bright Future", 11-16 June 2017, Manchester, UK
- 3) K. Kiegiel, A. Miśkiewicz, K. Iwińska, Social aspects of the implementation of the Polish Nuclear Power Programme, Social and ethical aspects of decision-making in radiological risk situations (RICOMET 2017), 27th - 29th June, 2017, Vienna, Austria
- 4) G. Zakrzewska-Kołtuniewicz, S. Latek, S. Sommer, A. Miśkiewicz, The experience gained within the EAGLE project as a contribution to the implementation of the programme of Polish nuclear energy, The Second International Conference on Risk Perception, Communication and Ethics of Exposures to Ionising Radiation (RICOMET 2016), 1-3 June, 2016, Bucharest
- 5) D. Gajda, K. Kiegiel, A. Abramowska, A. Miśkiewicz, E. Chajduk, S. Wołkowicz, G. Zakrzewska-Kołtuniewicz, Possibility of uranium recovery from Polish unconventional resources, ENC 2016: The European Forum to discuss Nuclear Science & Technology Issues, Opportunities & Challenges, 9 - 13 October 2016, Warsaw
- 6) A. Abramowska, D. Gajda, K. Kiegiel, A. Miśkiewicz, G. Zakrzewska-Kołtuniewicz, Treatment of radioactive wastewater by hybrid methods, ENC 2016: The European Forum to discuss Nuclear Science & Technology Issues, Opportunities & Challenges, 9 - 13 October 2016, Warsaw
- 7) G. Zakrzewska-Kołtuniewicz, A. Miśkiewicz, Public perception and acceptance – the experience of stakeholders' involvement in the implementation of the Program of Polish Nuclear Energy, SENIX Conference - The role of Social Sciences in Low-Carbon Energy Mix, 25-27 May 2015, Sztokholm, Sweden

- 8) W. Olszewska, G. Zakrzewska-Kołtuniewicz, A. Miśkiewicz: Communication and information on ionizing radiation as a tool for social consensus around the construction of new repositories for radioactive waste in Poland, Risk perception, communication and ethics of exposures to ionising radiation (RICOMET 2015), 15-17.06.2015, Brdo, Slovenia
- 9) G. Zakrzewska-Kołtuniewicz, A. Miśkiewicz, K. Kiegiel, K. Iwińska: Budowanie platformy w celu intensyfikacji badań społecznych związanych z energetyką jądrową W Europie Środkowej i Wschodniej. Mądralin – 2015, 24-25.11.2015, Warsaw
- 10) K. Kiegiel, D. Gajda, A. Abramowska, A. Miśkiewicz, A. Oszczak, G. Zakrzewska-Kołtuniewicz: Uran z łupków gazonośnych?, Mądralin – 2015, 24-25.11.2015 Warsaw
- 11) D. Gajda, G. Zakrzewska-Kołtuniewicz, K. Kiegiel, A. Miśkiewicz, P. Biełuszka, I. Herdzik, A. Abramowska, W. Olszewska, M. Harasimowicz, R. Dybczyński, H. Polskowska-Motrenko, B. Dank, J. Dudek, Z. Samczyński, E. Chajduk, J. Chwastowska, I. Bartosiewicz, S. Wołkowicz, B. Miecznik: Analysis of the possibility of uranium supply from polish resources, First SACESS International Workshop, 22-24.04.2015, Warsaw
- 12) A. Abramowska, D. Gajda, K. Kiegiel, A. Miśkiewicz, G. Zakrzewska-Kołtuniewicz: Purification of backflow fluids after hydraulic fracturing of polish gas shales, XXXII European Membrane Society Summer School 2015 “Integrated and Electromembrane processes”, June 21-26, 2015 - Stráž pod Ralskem / Liberec, Czech Republic
- 13) K. Kiegiel, G. Zakrzewska-Kołtuniewicz, D. Gajda, A. Abramowska, A. Miśkiewicz: The Recovery Of Valuable Metals From Flowback Fluids After Hydraulic Fracturing Of Polish Gas-Bearing Shales, Athens Institute For Education And Research, 3rd Annual International Conference on Chemistry, 20-23 July 2015, Athens, Greece
- 14) W. Olszewska, A. Miśkiewicz, G. Zakrzewska-Kołtuniewicz: Zagadnienia bezpieczeństwa w projektowaniu składowisk odpadów promieniotwórczych, XI Warszawskie Seminarium Doktorantów Chemików - ChemSession'14, 16 may 2014 Warsaw
- 15) W. Olszewska, A. Miśkiewicz, G. Zakrzewska-Kołtuniewicz: Multi-barrier system against migration of radionuclides from radioactive waste repository, Nutech 2014—Development and Applications of Nuclear Technologies, 21-24 September 2014, Warsaw

- 16) D. Gajda, G. Zakrzewska, K. Kiegiel, A. Miśkiewicz, P. Biełuszka, M. Harasimowicz, B. Danko, Z. Samczyński, E. Chajduk, D. Wawszczak, M. Brykała, A. G. Chmielewski: Uranium As A By-Product With Possible Recovery Of Accompanying Metals”, International Conference "Metallurgy of Non-Ferrous Metals, 17-19 November 2014, Krakow
- 17) W. Niesłuchowska, A. Miśkiewicz, G. Zakrzewska-Trznadel, K. Kulisa, Zastosowanie biosorbentów w procesach hybrydowych UF/sorpcja do usuwania wybranych radionuklidów z niskoaktywnych odpadów promieniotwórczych, VI Krajowa Konferencja Radiochemii i Chemii Jądrowej, 21-24. 04. 2013, Kraków-Przegorzały
- 18) M. Harasimowicz, P. Biełuszka, G. Zakrzewska, A. Miśkiewicz, Z. Samczyński, K. Kulisa: Recovery of uranium (VI) from phosphoric acid solutions, 6th Membrane Conference of Vysegrad Countries (PERMEA 2013), 15-19.09.2013, Warsaw
- 19) G. Zakrzewska-Trznadel, K. Kiegiel, K. Frąckiewicz, I. Herdzik, B. Zielińska, P. Biełuszka, D. Gajda, A. Miśkiewicz, A. Jaworska, K. Szczygłó, A. Abramowska, R. Dybczyński, H. Polkowska-Motrenko, B. Danko, Z. Samczyński, E. Chajduk, J. Chwastowska, I. Bartosiewicz, S. Wołkowicz, J. B. Miecznik: Analiza możliwości pozyskania uranu dla energetyki jądrowej z zasobów krajowych, Konferencja naukowo-techniczna, Nauka i technika wobec wyzwania budowy elektrowni jądrowej „Mądralin 2013”, 13-15.02.2013, Warsaw
- 20) G. Zakrzewska-Trznadel, A. Miśkiewicz, M. Harasimowicz, W. Niesłuchowska, P. Nieścior, K. Kulisa, Rozwój technik i technologii w zakresie postępowania z nisko- i średnioaktywnymi odpadami promieniotwórczymi: procesy hybrydowe, Konferencja naukowo-techniczna, Nauka i technika wobec wyzwania budowy elektrowni jądrowej „Mądralin 2013”, 13-15.02.2013, Warsaw
- 21) G. Zakrzewska-Trznadel, A. Miśkiewicz, A. Jaworska, K. Kiegiel, D. Gajda, A. Bilewicz, B. Sartowska, M. Kruszewski: Włączanie nowych krajów członkowskich Unii Europejskiej w struktury zaawansowanych badań w ramach Euratomu (New MS Linking for an Advanced Cohesion in Euratom (NEWLANCER), Konferencja naukowo-techniczna, Nauka i technika wobec wyzwania budowy elektrowni jądrowej „Mądralin 2013”, 13-15.02.2013, Warsaw

G. Zakrzewska-Trznadel, A. Miśkiewicz: Wdrażanie polityki współuczestnictwa społeczeństwa w procesach decyzyjnych związanych ze składowaniem odpadów radioaktywnych (Implementing public participation approaches in radioactive waste disposal (IPPA), „Konferencja naukowo-techniczna, Nauka i technika wobec wyzwania budowy elektrowni jądrowej (Mądralin 2013)”, 13-15.02.2013, Warsaw

8. Information on participation in organizational and scientific committees at national or international conferences, including the applicant's function.

- NUTECH 2017- member of the organizing committee
- Mądralin 2013- member of the organizing committee

9. Information on participation in the works of research teams realizing projects financed through national and international competitions, including the projects which have been completed and projects in progress, and information on the function performed in the team.

Ongoing projects:

- 1) "Plan of decarbonisation of the domestic power industry through modernization with the use of nuclear reactors" (Desire), financed by the National Center for Research and Development under the Program "Social and economic development of Poland in conditions of globalizing markets" GOSPOSTRATEG, 01.05.2022 - 30.09.2023 - **team leader at INCT**
- 2) "European Joint Programme on radioactive waste management" (EURAD), HORIZON 20220, 01.06.2019 - 31.05.2024 – **contractor**

Completed projects (after the award the PhD degree):

- 1) "Studies on the phenomena occurring in the membrane boundary layer during the filtration of aqueous solutions and suspensions proceeding in membrane apparatuses of different configurations" financed by the National Science Centre Poland under SONATA 6 projects, 27.08.2014-26.06.2018 - **project manager**

- 2) „Studying the social and socio-economic effects of the implementation of the Polish nuclear power programme using new methodology” IAEA Coordinated Research Project, CRP-I12005, 15.09.2014-05.09.2017 – **contractor**
- 3) „Studying the social and socio-economic effects of the implementation of the Polish nuclear power programme using new methodology” project co-financed from funds for science in 2014-2017, Ministry of Science and Higher Education, 15.09.2014-05.09.2017 - **project manager**
- 4) „Preparation of legal, organizational and technical instruments for the HTR implementation”, financed by the National Center for Research and Development under the Program "Social and economic development of Poland in conditions of globalizing markets" GOSPOSTRATEG, 01.08.2020 - 31.01.2022 – **contractor**
- 5) „Management of Wastes Containing Long-lived Alpha Emitters”, IAEA Coordinated Research Project, 20.09.2019 - 31.12.2022 – **contractor**
- 6) “The studies on waste PET-derived metal-organic framework (MOFs) as cost-effective adsorbents for removal of hazardous elements from polluted water” (PET-MOF-CLEANWATER), Joint Research Programme between National Research Foundation (NRF), South Africa and the Polish National Centre for Research and Development (NCBR), 14.03.2020- 31.03 2022 – **contractor**
- 7) „Characterization of conditioned nuclear waste for its safe disposal in Europe” (CHANCE), Horyzont2020, 01.06.2017 - 31.03.2022 – **contractor**
- 8) "Investigation of the possibility of concentrating ions in the solution used to remove SO_x and NO_x using the hybrid method", as part of task 3 "Removal of high NO_x concentrations using an electron beam coupled with a water scrubber" TANGO 2 project "Plasma technology for removing nitrogen oxides from exhaust gases.", 2018-2019 – **contractor**
- 9) „Application of advanced membrane systems in nuclear desalination”, IAEA Coordinated Research Project, 15.09.2014-05.09.2017– **contractor**
- 10) „Application of advanced membrane systems in nuclear desalination”, project co-financed from funds for science in 2014-2017, Ministry of Science and Higher Education, 15.09.2014-05.09.2017– **contractor**

- 11) “Development of a safety assessment methodology and indication of the optimal location for shallow storage of low- and intermediate-level radioactive waste”, project under an agreement with the Ministry of Economy No:IV/156/P/15004/4300/13/DEJ, 08.05.2013-30.09.2017- **contractor**
- 12) „Building a platform for enhanced societal research related to nuclear energy in Central and Eastern Europe” (PLATENSO), 7FP UE, 01.09.2013-31.08.2016 – **team leader at INCT**
- 13) „Enhancing education, training, and communication processes for informed behaviours and decision-making related to ionising radiation risks” (EAGLE), 7FP UE, Euratom Fission-2010-1.1.2, 01.08.2013-31.07.2016 – **contractor**
- 14) „Assessment of regional capabilities for new reactors development through an integrated approach” (ARCADIA), 7FP UE, Fission-2013-6.0.1, 01.11.2013 - 31.10.2016 - **contractor**
- 15) “Conspan BlueGas – technology for treatment of flowback fluids from gas-bearing shales hydraulic fracturing with water recycling and reclamation of valuable metals” Projects Granted by the National Centre for Research and Development, 01.07.2014-31.12.2015 – **contractor**
- 16) “Technologies Supporting Development of Safe Nuclear Power Engineering”, task No. 4: “Development of spent nuclear fuel and radioactive waste management techniques and technologies” Strategic Research Project founded by the National Centre for Research and Development, 01.10.2011-30.09.2014 – **contractor**
- 17) „Implementing Public Participation Approaches in Radioactive Waste Disposal” (IPPA), 7FP UE, 01.01.2011-31.12.2014 - **contractor**

Completed projects (prior to the award the PhD degree):

- 1) „Analysis of the possibilities of uranium supply from domestic resources”, POIG 01.01.02-14-094-09-00, 01.04.2009-30.06.2013 – **contractor**
- 2) “An installation for processing of liquid radioactive waste in research institutes and units using radioactive substances”, Development Grant founded by the National Centre for Research and Development, 01.08.2009- 31.07.2012 – **contractor**

- 3) “Evaluation and Validation of Radionuclide Generator – Based Radiotracers for Industrial Applications” , Task: “Validation of the possibility of using Cs-Ba and Ge-Ga generators in laboratory and post-industrial radiotracer tests”, IAEA Coordinated Research Project, 2007 – 2011- **contractor**
- 4) „New methods of testing and reducing fouling in micro- and ultrafiltration processes of liquid radioactive waste”, Project financed by the Committee for Scientific Research, 2005-2007 - **contractor**
- 5) „Advanced Methods for Environment Research and Control” (AMERAC), 6FP UE, MTKD-CT-2004-509226, 01.01.2005-31.08.2008 - **contractor**

10. Membership in international or national organizations and scientific societies, including the functions performed by the applicant.

- Polish Nuclear Society - **elected member of the Management Board (2021-present)**
- Polish Membrane Society - **member**
- WiN Poland - **member of the Management Board from 2021, and from 2023 - elected President**

11. Information on internships completed in scientific or artistic institutions, also abroad, including the place, time and duration of the internship and its character.

- 07-11.05.2012 - Nuclear Energy Training & Itinerary In Sweden. Oskarhamn, Forsmark; Sweden, SKB International - training in radioactive waste management;
- 07-13.10.21012 - Radioactive Waste Disposal Route in France, ANDRA, EDF & AREVA – training in radioactive waste disposal;
- November 13 - 16, 2011 - study trip to French installations related to nuclear energy, program: Visit to CEA Marcoule, visit to the Atalante installation, visit to the Tricastine Nuclear Power Plant and the Fuel Enrichment Plant;
- 01.09.2007 – 20.12.2007 - University of New Lisbon, Marie Curie Transfer of Knowledge fellowship – research work on the removal of organic compounds using the electro-oxidation process combined with membrane processes (as a result of this work, an

article was created: *A. Miśkiewicz, S. Velizarov, „Effect of molecular mass on boron-doped diamond anodic mineralization of water-soluble organic polymers” Separation and Purification Technology 83 (2011) 166-172*;

- 01.04.2004 - 30.06.2004 Universität Rostock, Faculty of Physical Chemistry, Socrates-Erasmus fellowship - experimental work on determining the vapor pressure and enthalpy of vaporization of organic compounds.

12. Membership in editorial committees and scientific boards of journals, including the functions performed by the applicant (e.g. editor-in-chief, chairman of scientific board etc.) – not applicable

13. Information on scientific or artistic works reviewed, in particular those published in international journals.

Arabian Journal of Chemistry (Elsevier):

- “Metal removal from aqueous media by polymer-assisted ultrafiltration with chitosan”
- “Kinetic Analysis Applied to Ferrous Ions with Hydrogen Peroxide in Acidified Hydraulic Fracturing Reflux Fluid Model Containing Organic Complex”

Journal of Colloid and Interface Science (Elsevier):

- “Adsorption studies on the removal of lead ion from aqueous solution using ionic liquids decorated magnetic graphene oxide and chitosan as a low cost adsorbent”

Journal of Hazardous Materials (Elsevier):

- “Behaviour of Si, Al, Fe and Mg on processing of low grade uranium ore: A kinetic approach”

Desalination and Water Treatment:

- “Preparation and characterization of polyvinyl chloride porous membranes used DMAc/DOP as the mixed solvents”

Materials, MDPI:

- “Hydrothermal co-processing of coal fly ash cenospheres and 2 soluble Sr(II) as environmentally sustainable approach to Sr-90 3 immobilization in a mineral-like form”

Process, MDPI:

- “Decontamination of a contaminated RCP shaft using the SP-2 HyBRID process”

14. Information on participation in European or other international programmes - not applicable
15. Information on participation in research teams realizing projects other than those defined in section II.9 - not applicable
- 16. Information on membership in the teams assessing applications for financing of research projects, applications for scientific awards, applications in other competitions of scientific or didactic character.**

Participation in teams assessing proposals in the following competitions: H2020-MSCA-IF-2019, HORIZON-MSCA-2021-PF-01, HORIZON-MSCA-2022-PF-01 (EX2006C161640).

III. INFORMATION ON COOPERATION WITH SOCIAL AND ECONOMIC ENVIRONMENT

1. List of technological works - not applicable
- 2. Information on cooperation with economic sector**
 - a) Cooperation with the Radioactive Waste Management Plant (ZUOP):
 - “Research on the degree of wear and verification of the effectiveness of cleaning of membrane modules in the JP3RO installation, used for the treatment of liquid low-level radioactive waste, and preparing recommendations for the type of new membranes that would ensure higher efficiency of waste treatment.” Agreement No. 126/ZUOP/2018 of August 1, 2018;
 - Preparation of an executive design for the modernization of the JP3RO installation, used at the Radioactive Waste Management Plant to concentrate liquid low-level and intermediate-level radioactive waste. Agreement No. 24/ZUOP/2019 of April 3, 2019;
 - Cooperation with the PYROCAT CATALYSE WORLD sp. z o.o.
 - Cooperation with the CONSPAN®
- 3. Obtaining the right of industrial property, including the national or international patents granted.**

- G. Zakrzewska-Trznadel, A. Jaworska-Sobczak, **A. Miśkiewicz**, W. Łada, E. Dłuska, S. Wroński, “*Method of obtaining and separation of valuable metallic elements, specifically from low grade uranium ores and radioactive liquid wastes*”, Patent Application; No 12196071.0 – 2122 (07.12.2012); European Patent No 2604713 from 19.08.2015.
- G. Zakrzewska-Trznadel, A. Jaworska-Sobczak, **A. Miśkiewicz**, W. Łada, E. Dłuska, S. Wroński, “*Sposób pozyskiwania i separacji cennych pierwiastków metali, zwłaszcza z ubogich rud uranowych oraz ścieków radioaktywnych*”, (“*Method of obtaining and separation of valuable metallic elements, specifically from low grade uranium ores and radioactive liquid wastes*”), Polish patent No PL-223683 B1, Patent Office of the Republic of Poland, 31.10.2016

4. Information on implemented technologies- not applicable

5. Information on performed expert analyses or other studies prepared on request of public institutions or entrepreneurs

- „*Postępowanie z odpadami promieniotwórczymi i wypalonym paliwem jądrowym w Polsce – stan obecny i perspektywy*” (“*Management of radioactive waste and spent nuclear fuel in Poland - current status and prospects*”), opinion prepared under contract no. 156/II/P/15004/4390/17/DEJ as. " Analysis - management of radioactive waste and spent nuclear fuel in Poland - current status and prospects", Warsaw, December 2017, Analysis commissioned by DEJ, Ministry of Economy.
- “*Niekonwencjonalne źródła uranu w Polsce*” (“*Unconventional sources of uranium in Poland*”), Expert opinion prepared under contract no. IV/758/P/15004/43902/DEJ, Warsaw 2015. Analysis commissioned by DEJ, Ministry of Economy

6. Information on participation in expert and competition teams.

- 2013-2018 - Participation in the Communication Team for location studies for the Radioactive Waste Repository (SOP)

7. Information on artistic projects realized in non-artistic environment - not applicable

IV. SCIENTOMETRIC INFORMATION

1. Information on the Impact Factor

- **Summary IF of 10 articles from the cycle submitted as a scientific achievement: 34.793**
- **Summary IF of all articles: 59.024**

2. Information on the number of citations of the applicant's publications, including a separate list of self-citations.

- **Total number of citations: 172 (Web of Science)**
- **Total number of citations, without self-citations: 144 (Web of Science)**

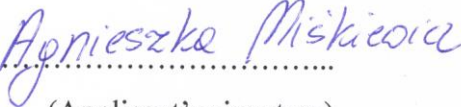
3. Information on h-index held

H-indeks: 7 (Web of Science)

4. Information on the number of the points awarded by the Ministry of Science and Higher Education.

Summary MNiSW points (according to the year of publication):

- **10 articles from the cycle submitted as a scientific achievement: 910 points**
- **All published articles: 1365 points**


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(Applicant's signature)