Stage 3 A.3. The properties optimization of new polysulfone-POSS membranes with ionic liquids

Approach:

A.3.1. The properties optimization of the polysulfone-POSS membranes with different ionic liquids contents

A.3.2. Dissemination of results and intellectual property rights The project will generate knowledge, technology and product with potential applicability. Fundamental research results will be published. It is expected to be published two papers in ISI indexed journals, relevant to the stages to be accomplished, with one paper in open access journal. The results will be disseminating through participation and presentation at three conferences.

A.3.2.1. Scientific Management. The project director is responsible for scientific management by monitoring compliance of the project work plan and working protocols established, periodic evaluation of the results obtained, adjust working strategies if necessary, dissemination of research results by publishing at least the number of scientific articles, performance of the steps for obtaining intellectual property.

A.3.2.2. Legal and economic-financial management. Financial management will consist of: following the compliance of the project financial plan for the activities planned and its revision if necessary (in case of deviations from the initial plan); accounting of all financial activities related to the project (purchases, salaries, travel); developing the project financial report, financial audit of the project. The jurist will permanently monitor the compliance of legislation in all activities related to project implementation, will draw up employment contracts or amendments to contracts of employment for persons employed on the project.

Expected results:

- 2 ISI papers, 3 conference presentations

All activities proposed to be carried out in Stage III of the AI-Syn-PPOSS project were fully carried out. The results obtained through the implementation of the AI-Syn-PPOSS project during the third stage of development were disseminated at international scientific events, in the form of oral and poster communications, as well as in the form of seven published articles.

Articles:

1. B.I. Ciubotaru, M.F. Zaltariov, **M. Dascalu, A. Bele, A. Bargan, M. Cazacu**, "Amino-functionalized silicones processed as porous dual covalent/supramolecular networks for pressure sensing", ***Reactive and Functional Polymers*** 194, 105792, https://doi.org/10.1016/j.reactfunctpolym.2023.105792 , (**2024**), FI_{2023} = 5.1, SRI= 1.587, (Q1).

2. M.E. Fortună, E. Ungureanu, R. Rotaru, **A. Bargan**, O.C. Ungureanu, C. O. Brezuleanu, V. Harabagiu, „Synthesis and Properties of Modified Biodegradable Polymers Based on Caprolactone", ***Polymers,*** 15(24), 4731, (**2023**), https://doi.org/10.3390/polym15244731 (open access), FI_{2023} = 4.967, SRI= 1.689, (Q1)

3. B.C. Condurache, **C. Cojocaru, A. Bargan**, P. Samoila, V. Harabagiu, „Dynamic Adsorption of a Cationic Dye onto Wool Fibers as Column-Filling Media: Response Surface Optimization and Fixed-Bed Adsorption Modeling", ***Materials*** 17, 790, (**2024**), https://doi.org/10.3390/ma17040790 (open access) F.I.=3.1, SRI= 1.792, (Q1).

4. A.M. Popovych, L.V. Tsymbal, D.M. Khomenko, **A. Bargan**, Y.D. Lampeka, R. D. Lampeka "Synthesis and crystal structure of a cadmium(II) coordination polymer based on 4,40-(1H-1,2,4-triazole-3,5-diyl)dibenzoate", ***Acta Crystallographica Section E- Crystallographic Communications***, E80, 128-132, (2024), https://doi.org/10.1107/S2056989024000185 , (open access) $F.I._{2023}$=0.5, SRI= 0.234, (Q3).

5. Y.S. Bibik, D.M. Khomenko, R.O. Doroshchuk, I.V. Raspertova, **A. Bargan**, R.D. Lampeka, "Synthesis and crystal structure of N1,N2-dimethyl-ethanedihydrazide", ***Acta Crystallographica Section E- Crystallographic Communications***, E80, 148-151, (**2024**), https://doi.org/10.1107/S2056989024000239 , (open access) $F.I._{2023}$=0.5, SRI= 0.234, (Q3).

6. B.V. Zakharchenko, D.M. Khomenko, R.O. Doroshchuk, **A. Bargan**, O. Yu. Vassilyeva, R.D. Lampeka, "Crystal structure of bis{2-[5-(3,4,5-trimethoxyphenyl)-4H-1,2,4-triazol-3-yl]pyridine}palladium(II) bis(trifluoroacetate)

trifluoroacetic acid disolvate", ***Acta Crystallographica Section E- Crystallographic Communications,*** E80, 567-571, (**2024**), https://doi.org/10.1107/S205698902400392X , (open access) F.I.$_{2023}$=0.5, SRI= 0.234, (Q3).
7. O.V. Vashchenko, D.M. Khomenko, R.O. Doroshchuk, **A.-C. Stoica**, O. Yu. Vassilyeva, R. D. Lampeka, "Crystal structure of catena-poly[[methanoldioxidouranium (VI)]-l-2-[5-(2-oxidophenyl)-1H-1,2,4-triazol-3-yl]acetato-j2O:O0]", ***Acta Crystallographica Section E- Crystallographic Communications***, E80, 852–856, (**2024**), https://doi.org/10.1107/S2056989024006637, (open access) F.I.$_{2023}$=0.5, SRI= 0.234, (Q3).
8. **A. Filimon**, D. Serbezeanu, D. Rusu, **A. Bargan**, L. Lupa, "Optimizing the features of high-performance electrospun membranes for safety and comfort in protective applications", Membranes, (open access), trimisa spre publicare, (**2024**), F.I.$_{2023}$=4.2, SRI= 1.342, (Q1).

Conferences (posters and communications)

1. **A. Bargan, G. Știubianu, M. Dascălu, A.M. Macsim, A. Bele, A. Soroceanu** "Membrane pe bază de polisulfone cu silsesquioxani funcționalizațișisi lichide ionice. Obținere, caracterizare și posibilă utilizare pentru aplicații de mediu", Conferința științifică internațională, Patrimoniul de ieri- Implicații în dezvoltarea societății de mâine, Ediția a IX-a Consacrată Zilei Internaționale a Femeilor și fetelor cu activități în domeniul Științei, 11 februarie „Femeile în cercetare: destine, contribuții, perspective" Iași-Chișinău-Lviv, 8-9.02.**2024**, 90-91, https://ibn.idsi.md/ro/vizualizare_articol/203490
2. **A. Bargan**, M.F. Zaltariov, B. I. Ciubotaru, **M. Dascalu, G. T. Stiubianu, M. Cazacu**, "Noi compuși pe bază de silatrani pentru aplicații biomedicale și de mediu", Conferința științifică internațională, Patrimoniul de ieri- Implicații în dezvoltarea societății de mâine, Ediția a IX-a Consacrată Zilei Internaționale a Femeilor și fetelor cu activități în domeniul Științei, 11 februarie „Femeile în cercetare: destine, contribuții, perspective" Iași-Chișinău-Lviv, 8-9.02. **2024**, Pag. 91-92, https://ibn.idsi.md/ro/vizualizare_articol/203495
3. B.I. Ciubotaru, M. F. Zaltariov, **M. Dascalu, A. Bargan**, "Rețele de siliconi amino-funcționalizați pentru aplicații de mediu", Conferința științifică internațională, Patrimoniul de ieri- Implicații în dezvoltarea societății de mâine, Ediția a IX-a Consacrată Zilei Internaționale a Femeilor și fetelor cu activități în domeniul Științei, 11 februarie „Femeile în cercetare: destine, contribuții, perspective" Iași-Chișinău-Lviv, 8-9.02. **2024**, Pag. 122-123, https://ibn.idsi.md/ro/vizualizare_articol/203546
4. A. Bargan, G.T. Stiubianu, M. Dascalu, A. Bele, A. Soroceanu, A.M. Macsim, PO.08. "Silsesquioxanes as key elements in new polysulfone-based membranes. Design, characterization and perspectives for environmental applications"13th International Conference on Materials Science and Engineering – BraMat **2024**, 13-16.03.2024, Brasov, Romania.
5. B.I. Ciubotaru, **M. Cazacu, M. F. Zaltariov, A. Bargan**, "Porous silicone networks as potential scaffolds in tissue engineering –mechanical aspects" Spring School for Young Researchers NEW TRENDS in EXPERIMENTAL MECHANICS - NTEM 1, Zakopane, Poland, May 13-17, **2024**
6. **A. Bargan, M. Cazacu**, A. Vlad, **A. Soroceanu** "P08. New complexes of pyrrole Schiff Base containing siloxane bond", International Congress of "Apollonia" University in Iasi, We are preparing the future by promoting Excellence, Edition a XXXIII-a, 29.02-3.03.**2024**, IAȘI, ROMANIA, https://www.univapollonia.ro/wp-content/uploads/2024/02/POSTERE-1.pdf
7. **A.C. Stoica**, M. Damoc, S. Shova, **M. Dascalu, M. Cazacu**, PO 33, "Coordination polymers of variable dimensionalities with siloxane entities" CoFRO 2024, Coordination Chemistry between France and Romania, 15-16.05.**2024**. https://cofro.sciencesconf.org/data/pages/CoFRO_Book_Abstracts_11.pdf
8. **A. Bargan**, M. F. Zaltariov, **M. Cazacu**, B. I. Ciubotaru PP1. "New compounds with silatrane moiety as biomedical agents", International Conference PolyChar World Forum on Advanced Materials 30th edition Iasi, Romania, September 11-13, **2024**, https://icmpp.ro/polychar'30 https://icmpp.ro/polychar'30/files/Polychar30%20conferinta%20format%20B5.pdf
9. E.D. Rotaru, M.F. Zaltariov, M. Balan-Porcarasu, M. Avadanei, **A. Bargan, M. Cazacu**, D. Amăriucăi-Mantu, IasiCHEM 2024 Conference 6th Edition 31 oct-1 noi, **2024**, P$_{II}$-III-3. "Synthesis and characterization of new imidazole derivatives containing flexible siloxane sequences",https://www.chem.uaic.ro/files/File/iasichem/2024-IASICHEM-PROGRAM-A5-FINAL.pdf