

List of scientific publications and patents

PhD thesis

Materiale polimerice pentru aplicații în hemodializă și osteointegrare (Polymeric membranes for applications in hemodialysis and osseointegration), coordinated by Prof. Dr. Ing. IOAN STEFAN VOICU, defended on 13.10.2023.

Book chapters

1. B. Boarca, M.E. Grigore, A.E. Stoica Eds., M. Oprea, Organs on a chip, Bioartificial Organs – Lambert Academic Publishing, 2019, Vol. 1, pp. 71-90.

Research articles and literature reviews

1. Oprea, M.; Pandele, A.M.; Enachescu, C.I.; Antoniac, I.V.; Voicu, S.I.; Fratila, A.M. Crown ether-functionalized polyethersulfone membranes with potential applications in hemodialysis. *Polymer*, 2025, 17(16), 2184.
2. Oprea, M., Pandele, A. M., Nechifor, A. C., Nicoara, A. I., Antoniac, I. V., Semenescu, A., Voicu, S.I., Enachescu, C.I., Fratila, A. M. Improved Biomineralization Using Cellulose Acetate/Magnetic Nanoparticles Composite Membranes. *Polymers*, 2025, 17(2), 209.
3. Oprea, M.; Ionita, M. Antisense oligonucleotides-based approaches for the treatment of multiple myeloma, *International Journal of Biological Macromolecules*, 2025, 291, 139186.
4. Panaitescu, D.M.; Oprea, M.; Frone, A.N.; Trica, B.; Popa-Tudor, I.; Ghiurea, M.; Nicolae, C.-A.; Gabor, A.R.; Oprica, G.M.; Usurelu, C.D.; Damian, C.M.; Constantinescu-Aruxandei, D.; Oancea, F. Valorization of spent lignocellulosic substrate of edible mushrooms into cellulose nanofibers for bionanocomposites production, *Journal of Polymers and the Environment*, 2024, 32(12), 6618-6635.
5. Cojocaru, E.; Oprea, M.; Vlasceanu, G.M.; Nicolae, M.C.; Popescu, R.-C.; Mereuta P.-E.; Toader, A.G.; Ionita, M. Dual nanofiber and graphene reinforcement of 3D printed biomimetic supports for bone tissue repair, *RSC Advances* 2024, 14(44), 32517-32532.
6. Oprea, M.; Voicu, S.I. Cellulose acetate-based membranes for the removal of heavy metals from water in the context of circular economy, *Industrial Crops and Products* 2023, 206, 117716.
7. Oprea, M.; Voicu, S.I. Cellulose acetate-based materials for water treatment in the context of circular economy. *Water* 2023, 15(10), 1860.
8. Oprea, M.; Pandele, A.M.; Nicoara, A.I.; Nicolescu, A.; Deleanu, C.; Voicu, S.I. Crown ether-functionalized cellulose acetate membranes with potential applications in osseointegration. *International Journal of Biological Macromolecules* 2023, 230, 123162.
9. Oprea, M.; Ficai, A.; Ilie, C.; Trusca, R.; Oprea, O.C.; Serbanescu, O.S.; Voicu, S.I. Zinc loaded cellulose acetate membranes with potential biomedical applications. *UPB Scientific Bulletin Series B: Chemistry and Materials Science* 2022, 84(2), 15-30.
10. Pandele, A.M.; Oprea, M.; Dutu, A.A.; Miculescu, F.; Voicu, S.I. A novel generation of polysulfone/crown etherfunctionalized reduced graphene oxide membranes with potential applications in hemodialysis. *Polymers* 2021, 14(1), 148.
11. Serbanescu, O.S.; Pandele, A.M.; Oprea, M.; Semenescu, A.; Thakur, V.K.; Voicu, S.I. Crown ether-immobilized cellulose acetate membranes for the retention of Gd (III). *Polymers* 2021, 13(22), 3978.

12. Panaitescu, D.M.; Nicolae, C.A.; Melinte, V.; Scutaru, A.L.; Gabor, A.R.; Popa, M.S.; Oprea, M.; Buruiana, T. Influence of microfibrillated cellulose and soft biocomponent on the morphology and thermal properties of thermoplastic polyurethanes. *Journal of Applied Polymer Science* 2021, 138(37), 50951.
13. Oprea, M.; Voicu, Ș.I. Cellulose-based composites with graphene for tissue engineering applications, *Materials* 2020, 13(23), 5347.
14. Oprea, M.; Panaitescu, D.M.; Nanocellulose hybrids with metal oxides for biomedical applications, *Molecules* 2020, 20(18), 4045.
15. Oprea, M.; Voicu, Ș.I. Recent advances in applications of cellulose derivatives-based composite membranes with hydroxyapatite. *Materials* 2020, 13(11), 2481.
16. Oprea, M.; Panaitescu, D.M.; Nicolae, C.A.; Gabor, A.R.; Frone, A.N.; Raditoiu, V.; Trusca, R.; Casarica, A. Nanocomposites from functionalized bacterial cellulose and poly(3-hydroxybutyrate-co-3-hydroxyvalerate). *Polymer Degradation and Stability* 2020, 179, 109203.
17. Oprea, M.; Voicu, S.I. Recent advances in composites based on cellulose derivatives for biomedical applications. *Carbohydrate Polymers* 2020, 247, 116683.
18. Frone, A.N.; Batalu, D.; Chiulan, I.; Oprea, M.; Gabor, A.R.; Nicolae, C.A.; Raditoiu, V.; Trusca, R.; Panaitescu, D.M. Morpho-structural, thermal and mechanical properties of PLA/PHB/Cellulose biodegradable nanocomposites obtained by compression molding, extrusion, and 3D printing. *Nanomaterials (Basel, Switzerland)* 2019, 10(1), 51.
19. Frone, A.N.; Chiulan, I.; Oprea, M.; Stoian, A.S.; Panaitescu, D.M.; Gabor, A.R.; Nicolae, C.A. Effect of different POSS structures on thermal and morphological properties of a biodegradable polyester. *Multidisciplinary Digital Publishing Institute Proceedings* 2019, 29, 87.
20. Frone, A.N.; Panaitescu, D.M.; Chiulan, I.; Gabor, A.R.; Nicolae, C.A.; Oprea, M.; Ghiurea, M.; Gavrilescu, D.; Puitel, A.C. Thermal and mechanical behavior of biodegradable polyester films containing cellulose nanofibers. *Journal of Thermal Analysis and Calorimetry* 2019, 138, 2387-2398.

Patents

1. S.I. Voicu, M. Oprea, A.M. Pandele, A. Semenescu, M.C. Costoiu, F. Miculescu, I.V. Antoniac, I.M. Mates, L.I. Cioca -"Dialysis membrane with the ability of controlled release of active substances for the concomitant treatment of chronic renal dysfunction and liver cancer and the procedure for obtaining it"
2. A.N. Frone, D.M. Panaitescu, M. Oprea – „Biocompozite polimerice cu efect antibacterian pentru aplicații biomedicale”, RO135357A2/25.05.2020.