Dr. Silvia Vasiliu

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Research topics

- Expertise in synthesis and characterization of linear polybetaines based on poly(N-vinylimidazole) and poly(4-vinylpyridine), as well as the synthesis and characterization of crosslinked zwitterionic polymer materials with high selectivity for heavy metals and organic pollutants.

- Synthesis and characterization of microparticles by simple and complex coacervation as controlled drug delivery systems for various administration routes.

- Porous microparticles obtained by grafting polysaccharides (xanthan, gellan, chitosan, sodium hyaluronan) onto crosslinked networks based on acrylic monomers using suspension polymerization technique. These microparticles were used in various applications, more precisely in the retention, delivery and sustained release of various drug as well as in biotechnological field as polymeric supports for enzyme immobilization.

- Microparticles with complex architectures based on the polyelectrolyte complexes between acrylic ion exchange resins and polysaccharides.

Scientific research

Author and co-author of 35 ISI articles, 2 books, 10 book chapters, 3 articles in proceedings, 3 conferences, 30 posters, 21 oral communications and 15 research national and international grants.

5 important publications

1. S. Vasiliu, S. Racovita, I.A. Gugoasa, M.A. Lungan, M. Popa, J. Desbrieres
The benefits of smart nanopaticles in dental applications
International Journal of Molecular Science 22(2021)2585.

2. N. Baranov, S. Raovita, S. Vasiliu, A.M. Macsim, C. Lionte, V. Sunel, M. Popa, J. Desbrieres, C. Cheptea
Immobilization and release studies of triazole derivatives from grafted copolymer based on gellan-carrying betaine units
Molecules 26 (2021*)* 3330.

3. S. Vasiliu, M.A. Lungan, I. Gugoasa, M. Drobota, M. Popa, M. Mihai, S.Racovita
Design of porous microparticles based on chitosan and methacrylic monomers
ChemistrySelect 4 (2019) 1-9.

4. M. A. Lungan, M.Popa, J. Desbrieres, S. Racovita, S. Vasiliu
Complex microparticulate systems based on glycidyl methacrylate and xanthan
Carbohydrate Polymers 104 (2014) 213-222.

5. S. Vasiliu, I. Bunia, S. Racovita, V. Neagu
Adsorption of cefotaxime sodium salt on polymer coated ion exchange resin microparticles: Kinetics, equilibrium and thermogravimetric studies
Carbohydrate Polymers 85 (2011) 376-387.