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Research topics

Synthesis and characterization of new polymeric composites based on chitosan (CS) and poly (vinyl amine) (PVAm), and the study of sorption capacity of heavy metal ions by CS/ PVAm composites. Preparation and characterization of macroporous composite hydrogels type polymeric interpenetrated network (IPN) based on methacrylic acid and acrylamide as the first network, and CS cross-linked with poly (ethylene glycol diglycidyl ether) as second network, and testing the ability of the new macroporous composite hydrogels for controlled release systems of the active principles. Synthesis of different 2-hydroxyethyl methacrylate based hydrogels and the study of their sorption capacity for two anticarcinogenic drugs, study of their release mechanism. Characterization methods used in these studies are: scanning electron microscopy (SEM), infrared spectroscopy (FTIR), UV-measurements.

Scientific research

Author and co-author of 14 ISI articles, 1 book chapter, 1 article in proceedings, 9 posters, 13 oral communications and 1 research grant.

5 important publications

1. Dragan E.S., Apopei Loghin D.F., **Cocarta A.I.**
Efficient Sorption of Cu²⁺ by Composite Chelating Sorbents Based on Potato Starch-graft-Polyamidoxime Embedded in Chitosan Beads
ACS Applied Materials & Interfaces 6 (2014) 16577-16592
<https://pubs.acs.org/doi/abs/10.1021/am504480q>
2. Dragan E.S., **Cocarta A.I.**
Smart Macroporous IPN Hydrogels Responsive to pH, Temperature and Ionic Strength: Synthesis, haracterization and Evaluation of Controlled Release of Drugs
ACS Applied Matererials & Interfaces 8 (2016) 12018-12030
<https://pubs.acs.org/doi/abs/10.1021/acsami.6b02264>
3. Dragan E.S., Loghin Apopei D.F., **Cocarta A.-I.**, Doroftei M.
Multi-stimuli-responsive semi-IPN cryogels with native and anionic potato starch entrapped in poly(N,N-dimethylaminoethyl methacrylate) matrix and their potential in drug delivery
Reactive and Functional Polymers 105 (2016) 66-77
<https://www.sciencedirect.com/science/article/pii/S1381514816301079>
4. Dragan E.S, Mayr J., Häring M., **Cocarta A.I.**, Díaz Díaz D.
Spectroscopic Characterization of Azo Dyes Aggregation Induced by DABCO-Based Ionene Polymers and Dye Removal Efficiency as a Function of Ionene Structure
ACS Applied Matererials & Interfaces 8 (2016) 30908-30919
<https://pubs.acs.org/doi/10.1021/acsami.6b09853>
5. **Cocarta A.I.**, Gutanu V., Dragan E.S.
Structural, morphological and magnetic characterization of metal-chitosan/poly(vinyl amine) complexes
Journal of Polymer Research 24 (2017) 20
<https://link.springer.com/article/10.1007/s10965-016-1182-3>