



# Synthesis, Spectroscopic and Thermal Characterization of New Polymeric Microspheres Based On Starch And Acrylic Monomers

B. Podkościelna<sup>a</sup>, M. Wawrzekiewicz<sup>b</sup> and B. Tarasiuk<sup>a</sup>

<sup>a</sup>*Department of Polymer Chemistry, Institute of Chemical Sciences, Faculty of Chemistry,  
Maria Curie-Skłodowska University in Lublin, Poland*

<sup>b</sup>*Department of Inorganic Chemistry, Institute of Chemical Sciences, Faculty of Chemistry,  
Maria Curie-Skłodowska University in Lublin, Poland*

\*[beata.podkoscielna@mail.umcs.pl](mailto:beata.podkoscielna@mail.umcs.pl)

Starch belongs to the group of polysaccharides of plant origin. It is composed of glucose mers linked by  $\alpha$ -glycosidic bonds and acts as an energy store in plants. Starch is a very interesting biopolymer, the possibilities for its use in sorption processes being created by its very interesting structure resulting from the presence of hydroxyl groups. The undoubted advantages of using starch are its very wide availability, low price and hydrophilic nature. What limits the use of starch is its poor mechanical resistance and partial solubility in hot water. The use of starch as an additive in the synthesis of polymeric microspheres can significantly improve the aforementioned properties and broaden the range of potential applications of this interesting biopolymer considerably.

The aim of this study was to synthesize polymeric microspheres based on dimethacrylate ethylene glycol, vinyl acetate and modified starch. Suspension polymerization was used to obtain the materials in spherical form. The reaction was carried out in an aqueous medium using poly(vinyl alcohol) as a suspension stabilizer. As a result of the polymerization, materials differing in starch functionality were obtained. A reference material without any chemical modification of starch was also obtained. The biosorbents were tested for their use as potential adsorbents of organic compounds.

**Keywords:** starch, suspension polymerization, polymeric microspheres, thermal properties, adsorption

## References

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