

SYNTHESIS OF POLYMERIC CHITOSAN MICROPARTICLES DOPED WITH CO NANOPARTICLES

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This study details the process of obtaining porous chitosan microparticles doped with Co nanoparticles. The synthesis of the microspheres begins with the preparation of a mixture of chitosan and 3% acetic acid, letting it stir for 12 hours until it is solubilized. . Subsequently, a 0.5 M sodium hydroxide solution is prepared. Through a precipitation process, the chitosan and acetic acid solution is slowly dripped onto the sodium hydroxide under constant stirring. When the solution falls, the formation is easily seen. of spheres that have a whitish color, once the dripping process is finished the spheres are kept under constant stirring for 3 hours, then they are filtered and washed with an ethanol-water solution until the pH of the spheres is neutral and finally With the help of the oven, they are dried at a temperature of 50°C for 30 min, obtaining amber chitosan microspheres with an average diameter of 1 mm.

For the formation of hybrid microparticles of chitosan and Co nanoparticles, the spheres were immersed in a cobalt chloride solution, kept stirring and a NaBH₄ solution was added drop by drop. In this step, the formation of a colored colloid was observed. black. The colloid was filtered and washed with an ethanol-water solution (30/70), then the powder obtained was dried in an oven at 60°C for 4 h. The particles were characterized by scanning electron microscopy (SEM) to study the morphology, where the size and diameter distribution of each of the studied particles is determined, measurements being carried out using the Measure Pixels software. The average diameter of the particles is 112.20 nm.

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