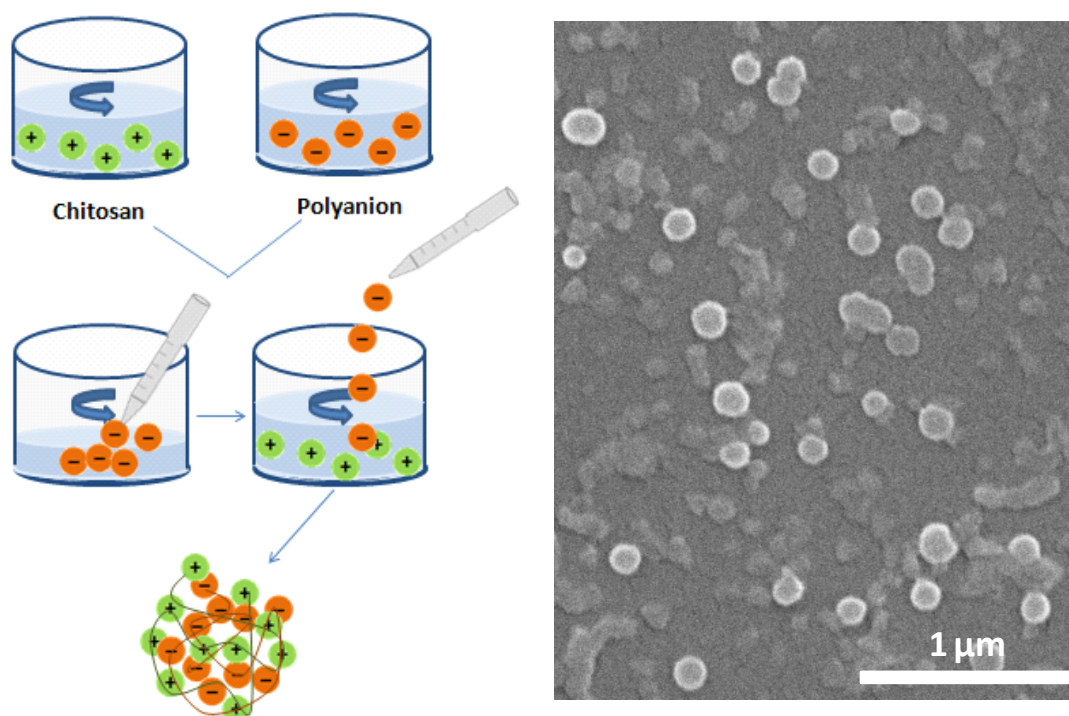


**Research line:** Nanoparticles for sustained drug delivery based in marine polysaccharides

**Research group:** Universidade do Minho - 3B's Research Group (Biomaterials, Biodegradables and Biomimetics)

The vast range of properties and characteristics of marine organisms may be of great interest when concerning a potential use in biomedical applications. For instance, the marine derived polymers are of special interest for such biomedical applications due to their biological and chemical similarities to the ones found in human tissues. In particular, nanoparticles are ideal for use as drug delivery systems since they can improve macromolecules stability, protect them from enzymatic degradation and control their release profile.

Within project NOVOMAR, nanoparticles are being produced based on the electrostatic interactions (polyelectrolyte complexation) between two different marine origin materials with opposite charge (Figure 1). Chitosan was chosen as the polymer with positive charge, which is being combined with several sulfated polyanions under different conditions. The objective is to produce tunable polymeric nanoparticles capable of deliver certain drugs in a sustained manner.



**Figure 1.** Procedure for the preparation of nanoparticles and SEM analysis of chitosan/chondroitin sulfate nanoparticles