

373e Chitosan-Based Gels and Microcapsules Loaded with Liposomes for Controlled Release Applications

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We report the preparation of polymer-based gels and microcapsules loaded with liposomes. Such materials could be useful for the controlled release of drugs or other chemicals. The microcapsules are formed by a complexation process involving a derivative of the biopolymer, chitosan with an anionic biopolymer or surfactant. To prepare liposome-loaded microcapsules, a solution containing the chitosan and liposomes is added dropwise into a solution of the anionic biopolymer. In the process, the chitosan at the drop interface gets physically crosslinked, and a thin, yet resilient shell is formed. The resulting microcapsules are mechanically stable, and the capsule diameter and shell thickness can be independently controlled. We have modified the above procedure to additionally incorporate ferromagnetic particles into the microcapsules for possible targeting via magnetic fields.