

Eco-friendly alginate and chitosan modified alginate particles produced by a dual ultrasonic nebulizer spray method for Pickering emulsions

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In recent years, there have been increasing interest in developing Pickering emulsions due to their potential applications in various area. The Pickering emulsions have similar formulations as like surfactant based emulsions. The only difference in the Pickering emulsions is that the surfactants are replaced by the solid particles. The shift from using solid inorganic particles to adopting the particles of biological origin for the stabilization of oil is a new trend in the field of Pickering emulsions. The present study emphasizes the novel nebulizer method to prepare eco-friendly alginate and modified alginate particles as Pickering stabilizers. Furthermore, we have employed these particles for the stabilization of two different oils. The polymerization of the styrene-emulsions was carried out using a thermal initiator. The microstructure of the modified alginate particles stabilized polystyrene microspheres was observed through scanning electron microscope technique. Also, we studied the behavior of PSMs at oil-water interface.