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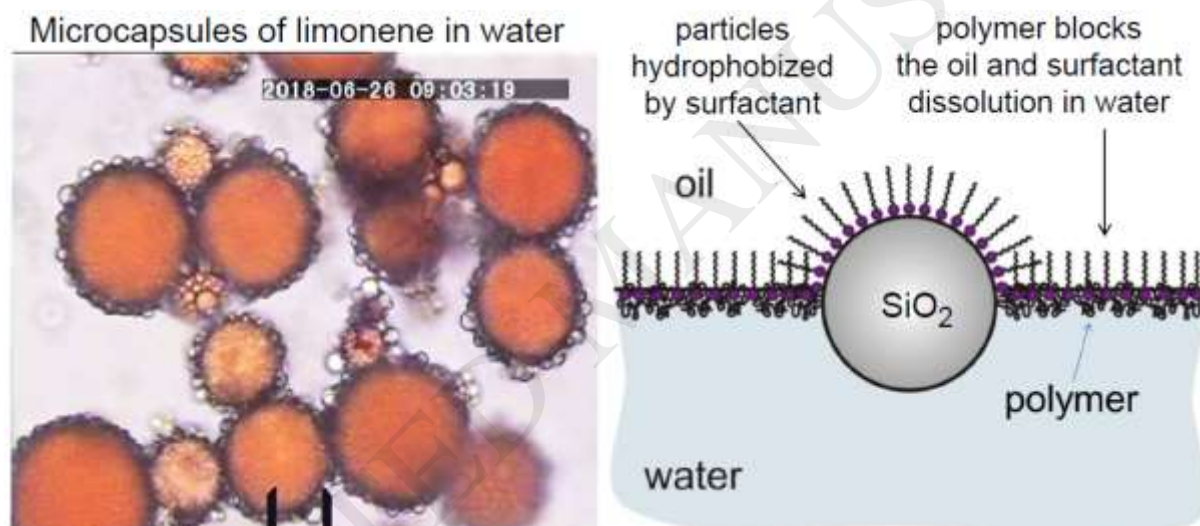
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Encapsulation of oils and fragrances by core-in-shell structures from silica particles, polymers and surfactants: The brick-and-mortar concept

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Graphical abstract



ABSTRACT. Colloidosomes provide a possibility to encapsulate oily substances in water in the form of core-in-shell structures. In this study, we produced microcapsules with shell from colloidal particles, where the interparticle openings are blocked by mixed layers from polymer and surfactant that prevent the leakage of cargo molecules. In other words, the particles and polymer play the role of bricks and mortar. For this goal, we used hydrophilic silica particles, which were partially hydrophobized by the adsorption of potassium oleate to enable them to stabilize Pickering emulsions. Various polymers were tested to select the most appropriate one. The procedure of encapsulation is simple and includes single homogenization by ultrasound. The produced capsules are pH responsive. They are stable in aqueous phase of pH in the range 3 – 6, but at pH > 6 they are destabilized and their cargo is

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