Effect of Polymer Nano- and Microparticles on Calcium Carbonate Crystallization

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Supporting information

Contents

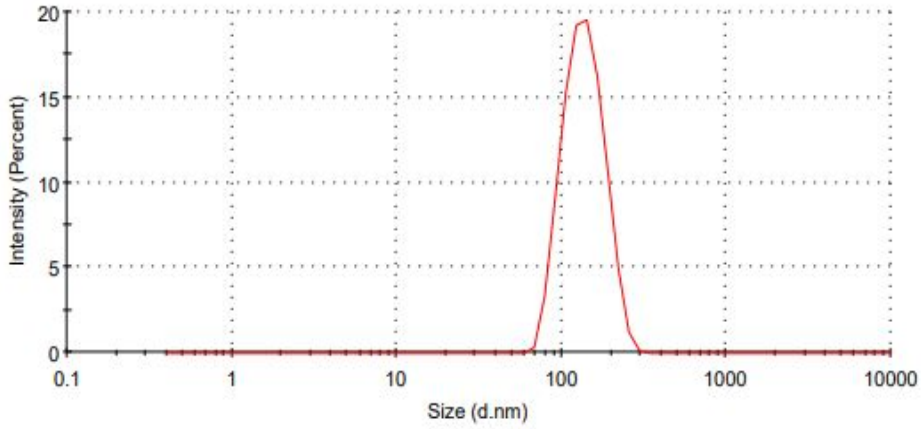

Figure S1. DLS data of microplastic prepared from nanoprecipitation and particle size distribution of PMMA NPs

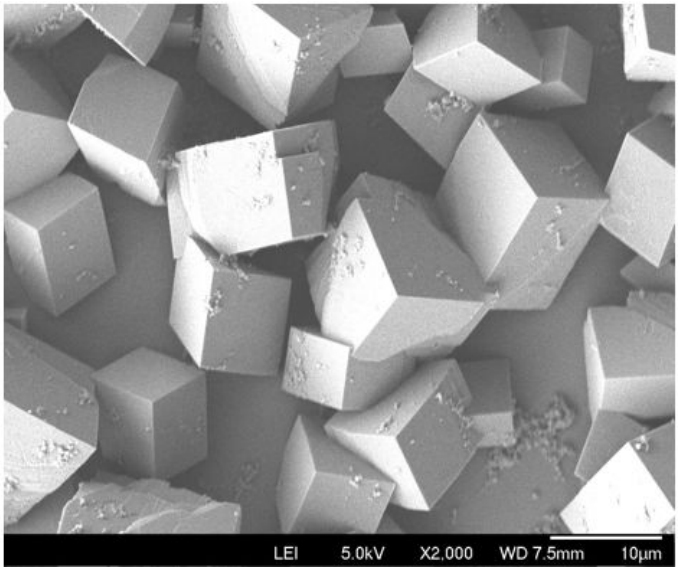

Figure S2. SEM micrographs of $CaCO_3$ crystals nucleated without added polymer nanoparticles or other additives.

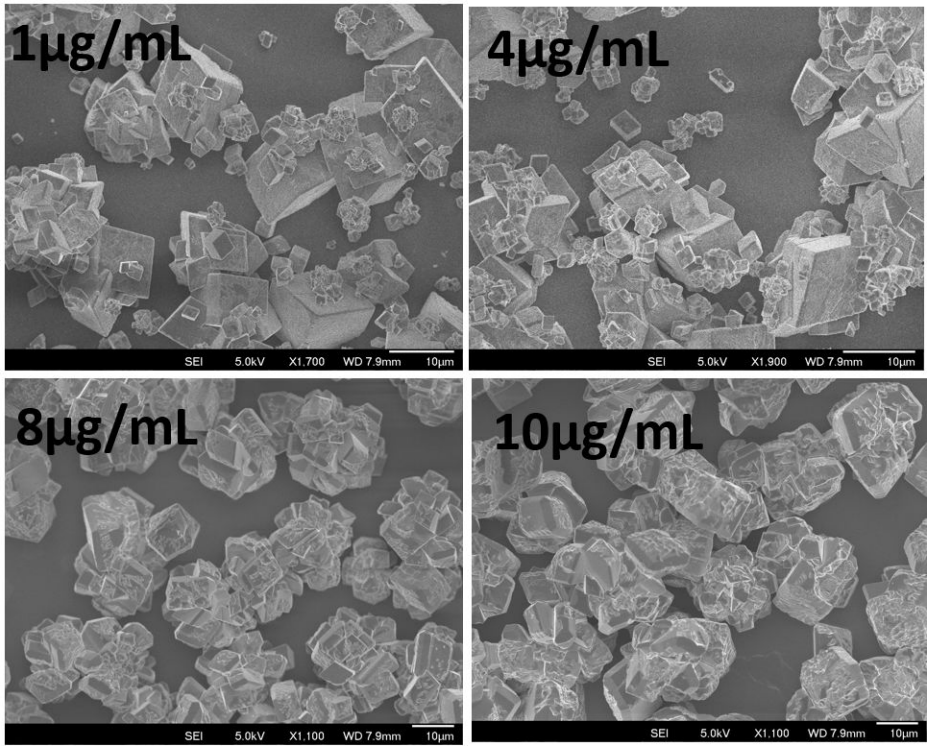

Figure S3. SEM images of $CaCO_3$ crystals nucleated in presence of different concentrations (1 – 10 µg/mL) of sodium dodecyl sulfate (SDS) solution. The concentration sued ae given on the micrograph.

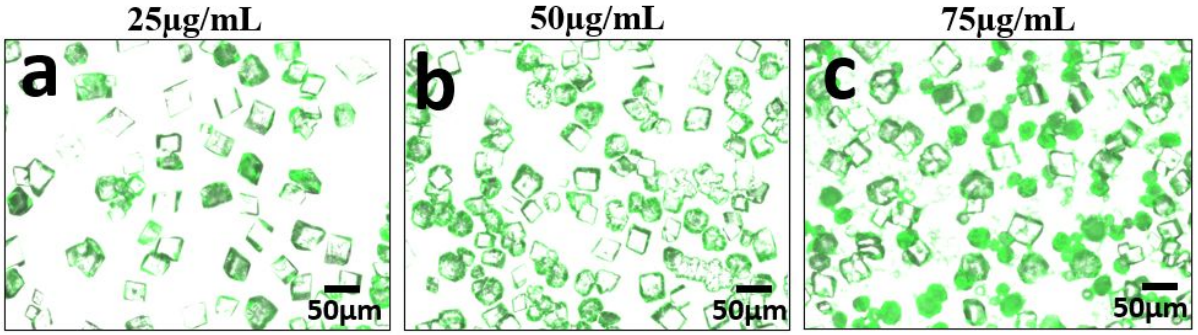

Figure S4. Fluorescent microscopic images of $CaCO_3$ crystals formed in presence of polymethacrylate nanoparticles (PMMA-NPs) at different concentrations a) 25µg/mL, b) 50 µg/mL and c) 75 µg/mL.

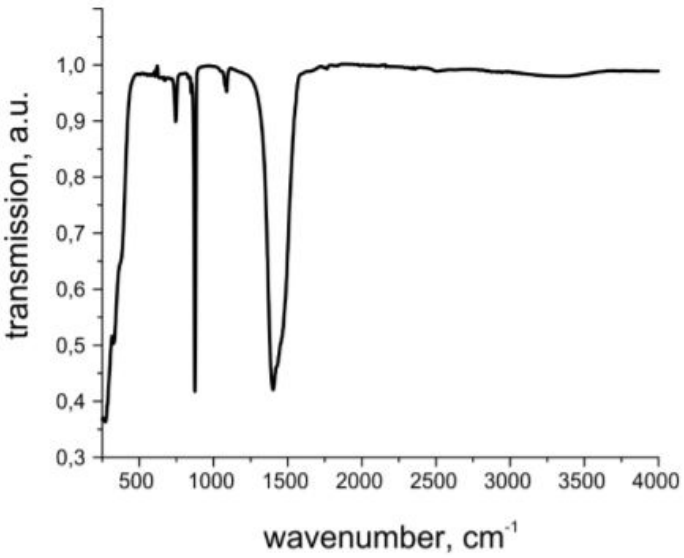

Figure S5. The FTIR spectrum of $CaCO_3$ particles obtained at EG/H_2O (Ethylene Glycol) ratio of 4:1 at 0.05 M reagent concentrations and R_3 = 0.084 ml/min dropping rate. The bands centered at 745 cm^{-1} (v4), 878 cm^{-1} (v2) and 1085 cm^{-1} (v1) are characteristic for vaterite.[39]

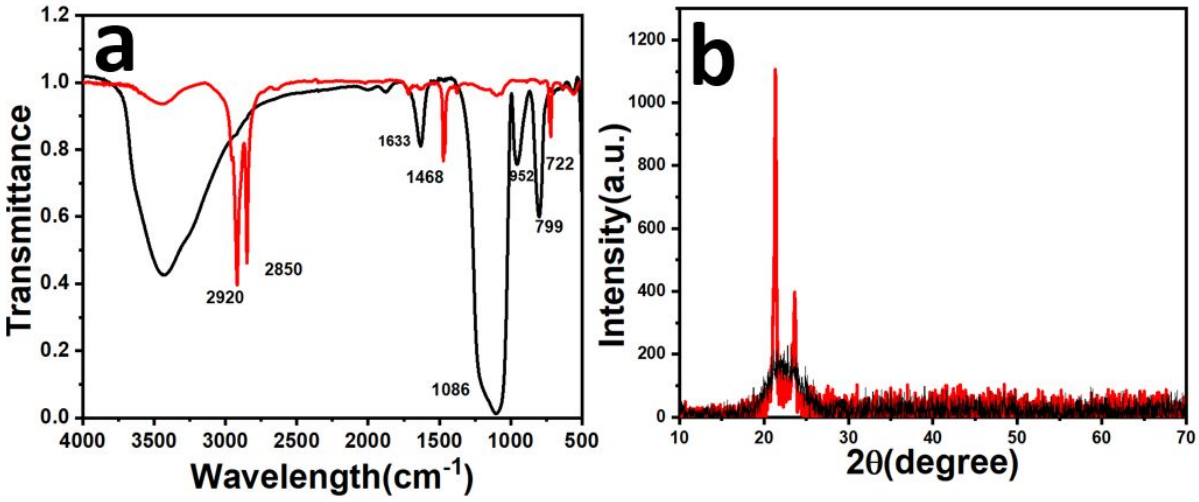

Figure S6. FTIR (a) and XRD (b) of green (—) and white (—) particles extracted from the facial scrub.

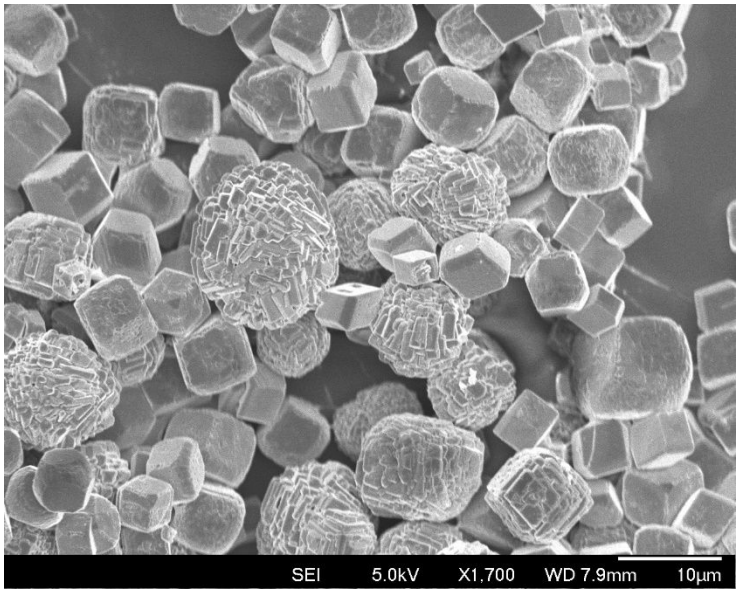

Figure S7. SEM image of $CaCO_3$ crystals nucleated under the influence of aqueous scrub solution.