Novel Hydrophobic Vaterite Particles for Oil Removal and Recovery

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Supporting Materials

Figure S-1: Oil contact angle profile of sample C-6



Figure S-2: Water Contact angle profiles of sample C-6 at different pH



Sample	Ca ²⁺ : Oleic acid (mole ratio)	Wt. Loss at 250- 600°C (%)
C-1	1:0	Nil
C-2	1: 0.0005	Nil
C-3	1:0.001	Nil
C-4	1:0.003	Nil
C-5	1:0.005	Nil
C-6	1:0.01	BDL
C-7	1:0.02	4
C-8	1:05	11

Table S-3. Percentage Weight Loss different CaCO₃ samples at 250-600°C

Table S-4. Oil absorption efficiency of various hydrophobic CaCO₃ samples from oil-water mixture (1:10)*

Sample	Ca ²⁺ : Oleic acid (mole ratio)	Wt. of water recovered (g)	Oil absorption efficiency (%)
C-2	1: 0.0005	18.5	92.5
C-3	1:0.001	19	95
C-4	1:0.003	19.5	97.5
C-5	1:0.005	19.8	99
C-6	1:0.01	19.8	99

*Total volume of oil-water mixture was 20 mL. 2g CaCO₃ samples were added in each case.

Figure S-5: Optical microscopic images of the functionalized PU foams depicting the presence of CaCO₃ particles aggregated in the interstitial spaces



Figure S-6. Air-water contact angle of the functionalized PU foam at different pH conditions



Figure S-7. Behavior of oil poured over unmodified (untreated) and functionalized PU foams.



Figure S-8: Selective sorption of Engine oil spilled over water by CaCO₃ functionalized foam



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