## Supplementary materials:

Figure SM1: thermogravimetric curves of surfactant-free materials (1) : (a) RL ; (b) 473 K – DL ; (c) SDL and Brij58/laponites materials (2): (a) SDL, (b)SDL/B-2, (c) SDL/B-4, (d) SDL/B-6, (e) SDL/B-8 and (f) physical blend of Brij58 and Quartz

Figure SM2: FTIR spectra of (a) RL, (b) SDL, (c) SDL/B-4 samples

Figure SM3 : <sup>29</sup>Si MAS-DEC NMR spectra of (a) RL and (b) SDL samples.

Figure SM4 : <sup>1</sup>H MAS-NMR spectra of dehydrated (a) RL and (b) SDL samples



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Figure SM2: FTIR spectra of (a) RL, (b) SDL,

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(c) SDL/B-4 samples



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Figure SM4 : <sup>1</sup>H MAS-NMR spectra of dehydrated (a) RL and (b) SDL samples