Electronic Supplementary Information

Underoil superhydrophilic desert sand layer for efficient gravity-directed water-in-oil emulsions separation

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Supplementary figure and movie captions:

Fig. S1 FE-SEM images of the sand layer for observation of pore size between sand particles.

Fig. S2 Microscope images, digital photos and droplet size distribution of the separation results for (a-c) Span 80-stabilized water-in-petroleum ether (W/P), (d-f) water-in-kerosene (W/K) and (g-i) water-in-hexane (W/H) emulsion.

Movie S1 The wastewater purification process of oil/dye polluted water mixtures based on the 1cm sand layer.

Movie S2 The process of an underoil water droplet infiltrates into the sand layer.

Movie S3 The separation process of surfactant-stabilized water-in-petroleum ether emulsion based on the sand layer**.**

Movie S4 The separation process of surfactant-stabilized water-in-kerosene emulsion based on the sand layer.

Movie S5 The separation process of surfactant-stabilized water-in-hexane emulsion based on the sand layer.

Movie S6 The bulk sand particle adsorbs water dyed by methyl blue in hexane.

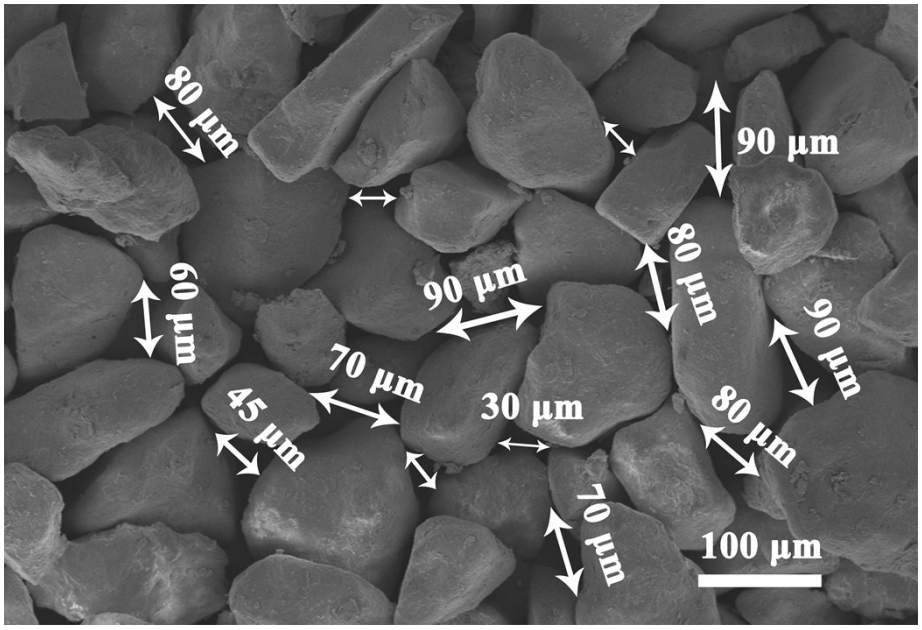

Fig. S1 FE-SEM images of the sand layer for observation of pore size between sand particles.

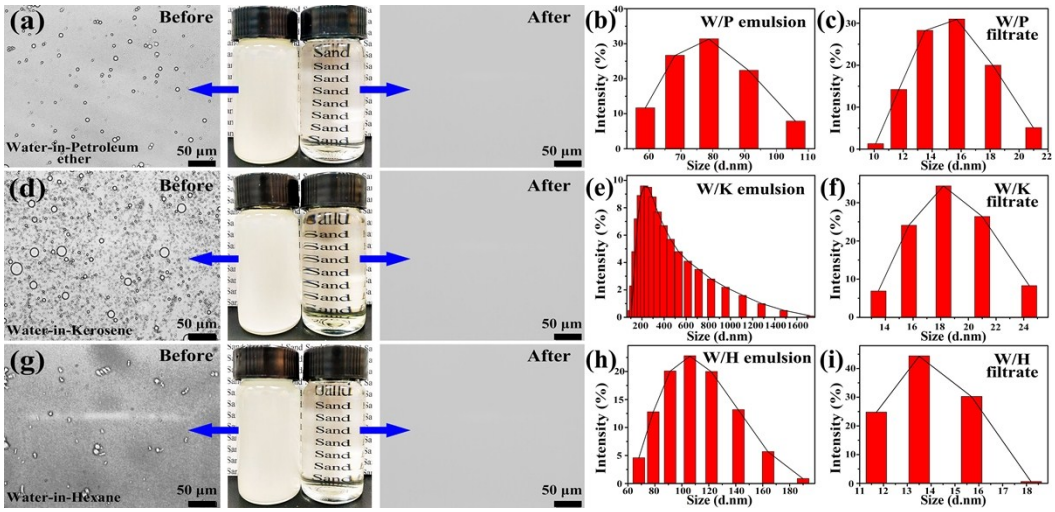

Fig. S2 Microscope images, digital photos and droplet size distribution of the separation results for (a-c) Span 80 stabilized water-in-petroleum ether (W/P), (d-f) water-in-kerosene (W/K) and (g-i) water-in-hexane (W/H) emulsion.