

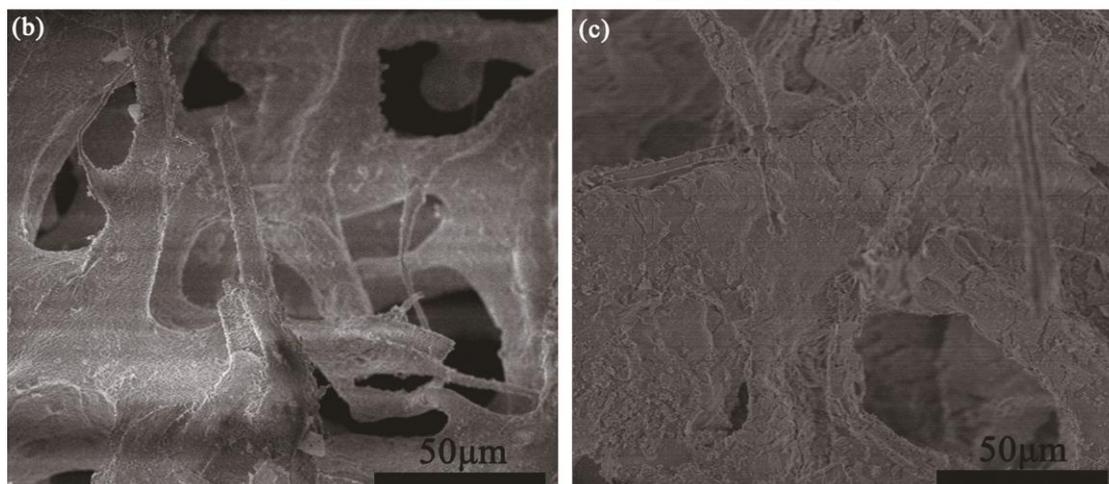
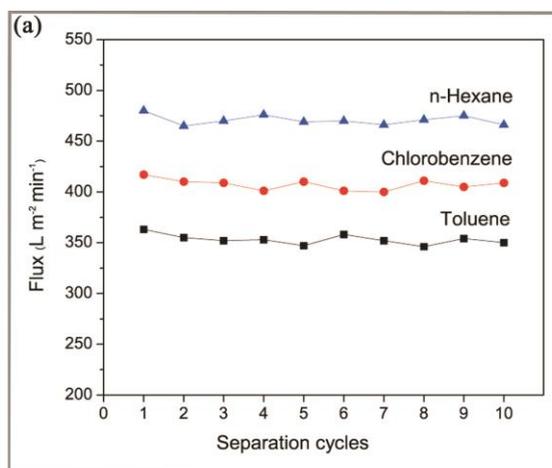
# Synthesis of a superhydrophobic polyvinyl alcohol sponge using water as the only solvent for continuous oil-water separation

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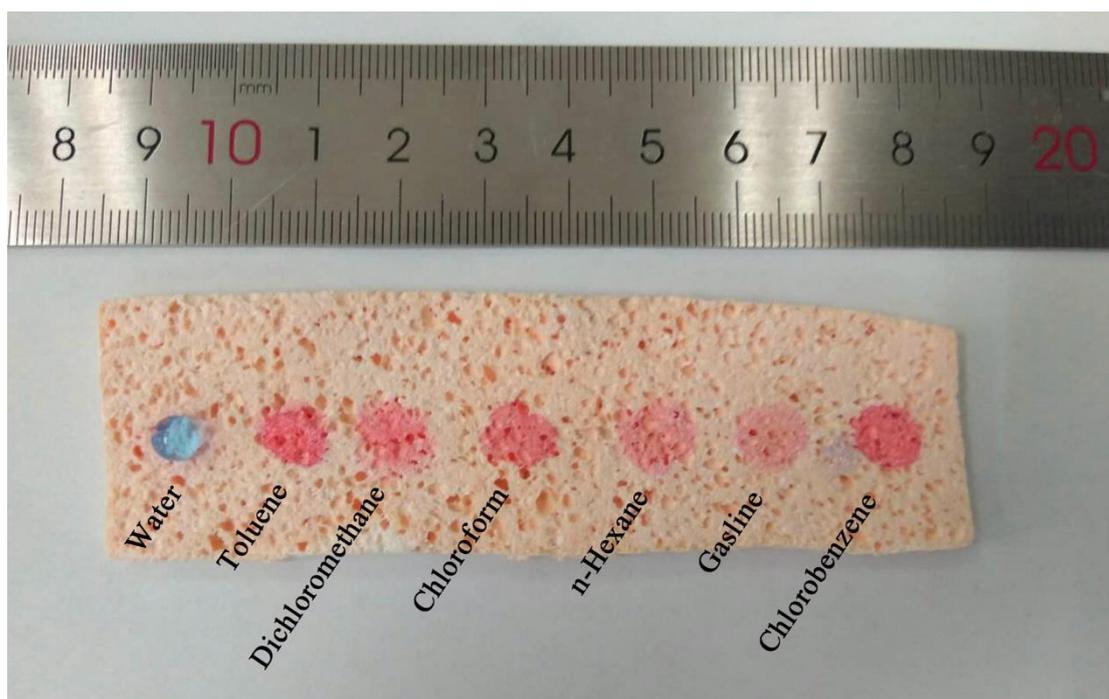
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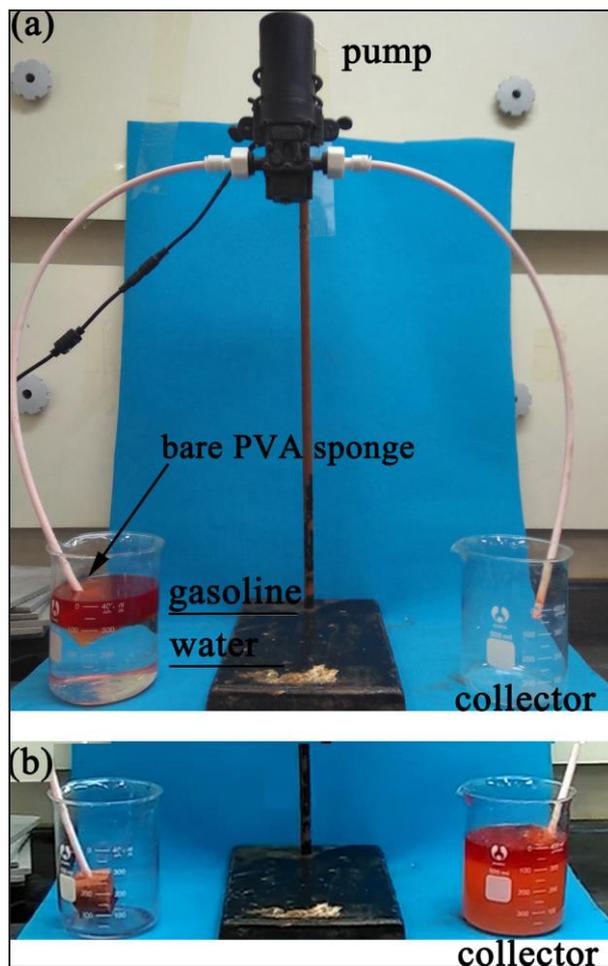
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**Fig. S1.** (a) Separation cycles of oil-water mixture. (b) SEM image of the silylated PVA sponge before toluene-water separation. (c) SEM image of the silylated PVA sponge after 10 separation cycles of toluene-water.



**Fig. S2.** Photograph of water (colored blue) and kinds of hydrophobic solvents (colored red) dropped onto the surface of the silylated PVA sponge. Hydrophobic solvents are colored red with Sudan III and water is colored blue with Methyl blue in advance, respectively.



**Fig. S3.** Photographs of (a) the continuous oil-water separation device, (b) oil-water mixture image after continuous adsorption. Gasoline is colored red with Sudan III in advance.