Hydrophobic Modification of Polyurethane Sponge via Emulsion Polymerization for Selective Oil-Water Separation

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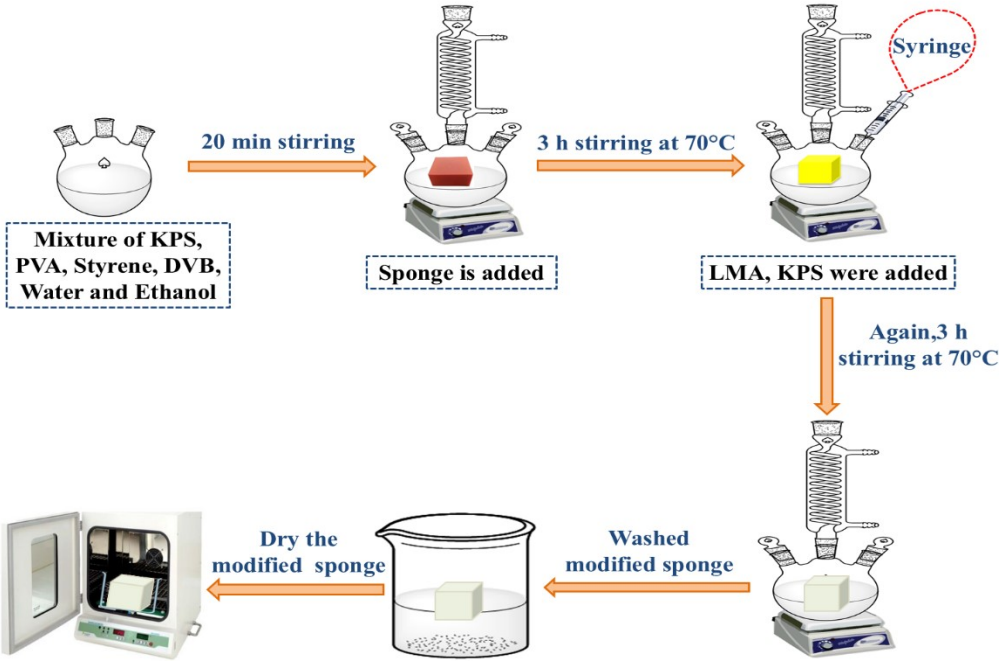

Figure S1. The experimental protocol for fabrication of superhydrophobic/superoleophilic PU sponge.

Table S1. Modification of PU sponge using different amounts of styrene (Run-1)

Sample code	Step-1		Step-2	Contact angle (°)
	Styrene(g)	DVB(g)	LMA(g)	
S-1	0.50	0.004	0.2	137 ± 2.0
S-2	0.75	0.004	0.2	145 ± 1.5
S-3	1.00	0.004	0.2	150 ± 2.5
S-4	1.25	0.004	0.2	142 ± 2.8
S-5	1.50	0.004	0.2	133 ± 3.2

Note: In the 1st step: H_2O = 20 g, ethanol = 10 g, PVA = 0.02 g and KPS = 0.036. In the 2nd step: KPS = 0.03 g. Polymerization temperature 70 ^{O}C.

Table S2. Modification of PU sponge using different amounts of LMA (Run-2).

Sample code	Step-1		Step-2	Contact angle (°)
	Styrene(g)	DVB(g)	LMA(g)	
S-6	1.00	0.004	0.10	143 ± 2.1
S-7	1.00	0.004	0.15	148 ± 1.0
S-8	1.00	0.004	0.20	150 ± 2.5
S-9	1.00	0.004	0.25	139 ± 1.6
S-10	1.00	0.004	0.30	135 ± 0.5

Note: In the 1st step: H_2O = 20 g, ethanol = 10 g, PVA = 0.02 g and KPS = 0.036. In the 2nd step: KPS = 0.03 g. Polymerization temperature 70 ^{O}C.

Table S3. Modification of PU sponge using different amounts of DVB (Run-3).

Sample code	Step-1		Step-2	Contact angle (°)
	Styrene(g)	DVB(g)	LMA(g)	
S-11	1.00	0.003	0.2	140 ± 3.0
S-12	1.00	0.004	0.2	150 ± 2.5
S-13	1.00	0.005	0.2	152 ± 1.2
S-14	1.00	0.006	0.2	145 ± 2.0
S-15	1.00	0.007	0.2	136 ± 3.2

Note: In the 1st step: H_2O = 20 g, ethanol = 10 g, PVA = 0.02 g and KPS = 0.036. In the 2nd step: KPS = 0.03 g. Polymerization temperature 70 ^{O}C.

Table S4. Modification of PU sponge using different ratios of water-ethanol (Run-4).

Sample code	Step-1			Step-2	Contact angle (°)
	Styrene(g)	Water(g)	Ethanol(g)	LMA (g)	
S-16	1.00	25	05	0.2	140 ± 2.5
S-17	1.00	20	10	0.2	149 ± 1.5
S-18	1.00	15	15	0.2	154 ± 2.0
S-19	1.00	10	20	0.2	147 ± 2.0
S-20	1.00	05	25	0.2	135 ± 0.5

Note: In the 1st step: DVB = 0.005 g, PVA = 0.02 g and KPS = 0.036. In the 2nd step: KPS = 0.03 g. Polymerization temperature 70 ^{O}C.