

Supporting Information

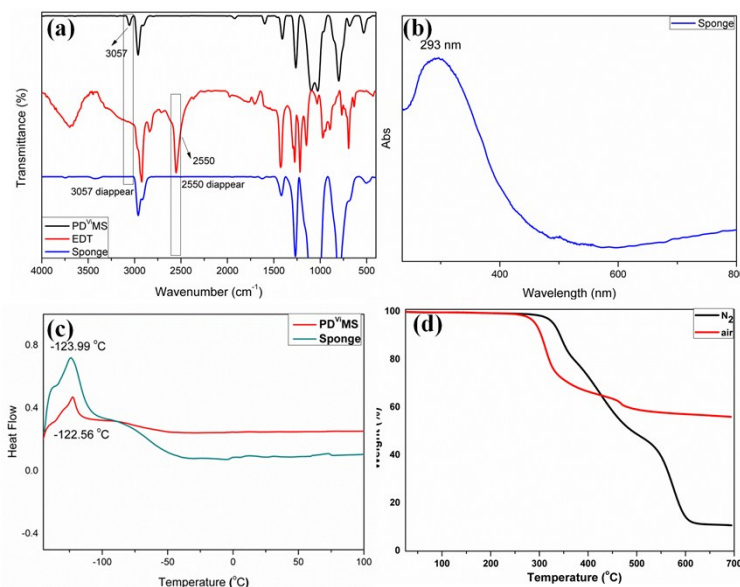


Figure S1 (a) The Fourier transform infrared spectroscopy (FT-IR) spectra of PDVMS, EDT, and SS1. (b) UV absorption spectrum of SS1. (c) DSC curves of PDVMS and SS1 under N₂ at 10 °C min⁻¹. (d) TGA curves of SS1 under nitrogen and air at 10 °C min⁻¹.

Table S1 Elemental analysis of the sponge SS1.

SS1	C %	H %	N %	S %
calculated	35.26	7.386	0	14.260
found	35.60	7.664	0	13.806

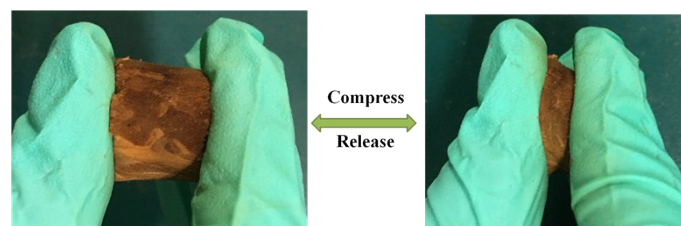


Figure S2 The digital photographs of the manual compression and recover to its original shape for the SS1 after being heated.

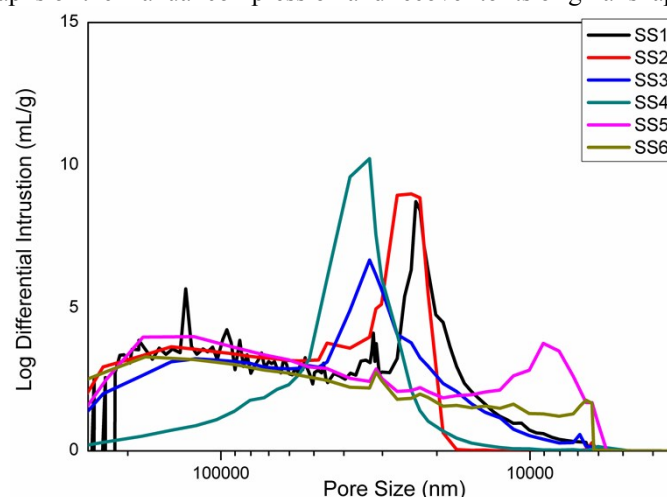


Figure S3 Pore size distribution of SS1, SS2, SS3, SS4, SS5, and SS6 obtained by mercury porosimetry.

Table S2 Information of the sponges obtained by mercury porosimetry.

Samples	porosity	bulk density	(average) 4V/A	median pore radius v nm	median pore radius	V _{total}
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					A nm	
SS1	87.2	0.173	66082.1	60140	27395	4.9564
SS2	86.7	0.175	61743.6	60020	28660	4.9517
SS3	85.3	0.186	53445.7	39750	27320	4.5819
SS4	81.1	0.242	42365.6	41510	35240	3.3532
SS5	81.4	0.162	52539.4	62100	11800	5.0305
SS6	64.0	0.160	45465.8	72500	13900	3.9970

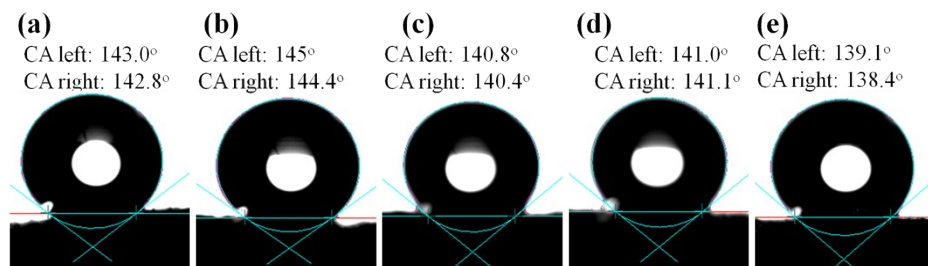


Figure S4 Contact angle measurements of water droplets on the SS1 surface after (a) being exposed to 365 nm UV irradiation for 5 h, (b) heating at 150 °C for 5 h, (c) immersing in water of pH=1 and (d) pH=13 for 5 h, (e) successive 20 times cyclic compression .