

Supplementary Information

Designing a single superabsorbent for separating oil from both layered as well as micron/submicron size emulsified oil/water mixture by gamma radiation assisted grafting

Subhendu Ray Chowdhury^{1*}, Atanu Jha¹, Uttam Manna² and K.S.S. Sarma¹

1. Radiation Technology Development Division, Bhabha Atomic Research Centre, Trombay, Mumbai-400 085, India.
2. Department of Chemistry, Indian Institute of Technology, Guwahati 400086, India

* To whom all correspondence should be addressed

Tel: +91-22-2788-7347, e-mail: rcsbhen@barc.gov.in; rcsbhendu@gmail.com

Supplementary Schemes and Figures, Figure S1-S4.

Supplementary Schemes and Figures

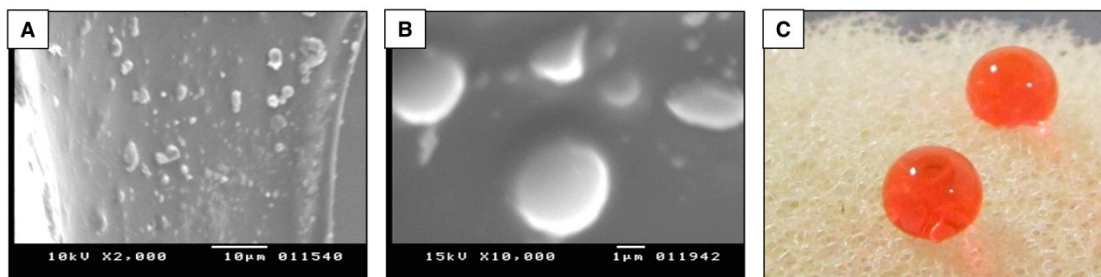


Figure S1. A-B) SEM images of DMA modified-PU sponge in higher magnifications for better illustration of the developed submicron/nano features. C) Digital image showing the beading of red color aqueous droplet (10 μ L) on DMA-grafted sponge that has been manually bended, twisted and squeezed for 100 times.

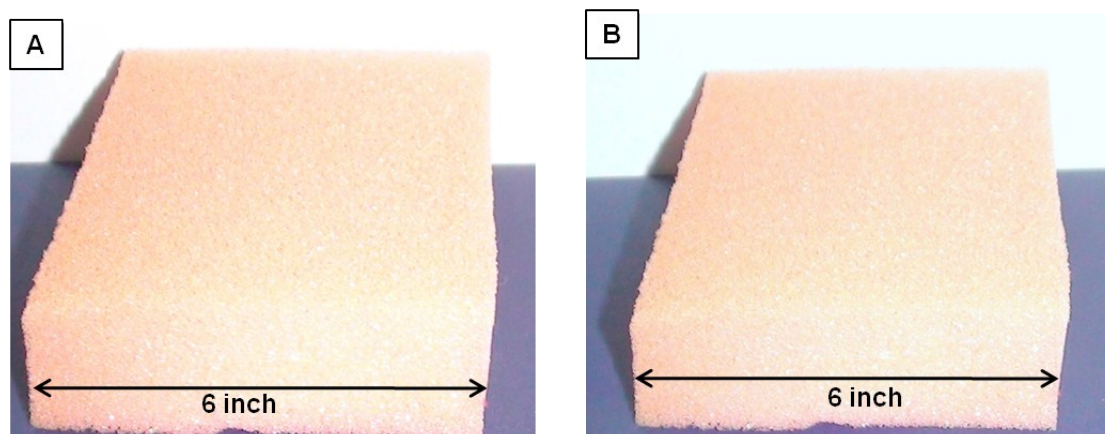


Figure S2. A-B) Digital images of pure (A) and DMA grafted (B) PU sponges. Dimension of both the sponges is \sim 6 inches x 6 inches x 2 inches.

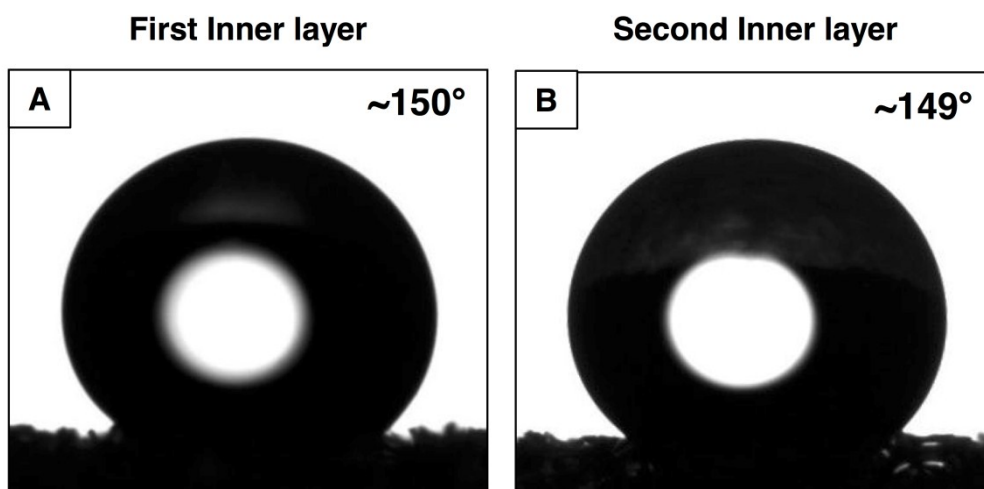


Figure S3. A-B) Water contact angle on arbitrarily chosen two inner layers of the modified PU sponges; water contact angle at first and second inner layers are respectively $\sim 150^\circ$ and 149° .

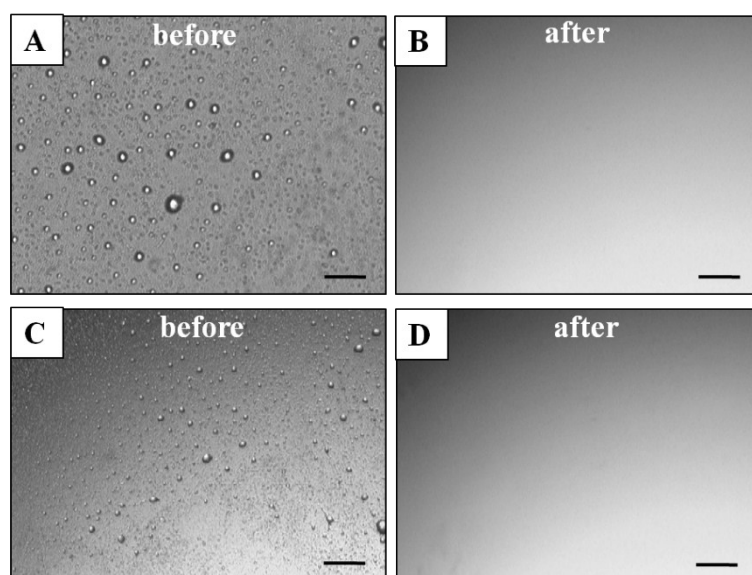


Figure S4. Optical microscopy images : emulsion without surfactant A) before and B) after separation, emulsions with surfactant C) before and D) after separation, scale bars = 5 μm .