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Supporting Information

Bioinspired Reversible Hydrogel Adhesives for Wet and Underwater Surfaces

Hoon Yi,[a] Sung Ho Lee,[b] Seong Minho,[a] Moon Kyu Kwak[b] and Hoon Eui Jeong*[a]

[a]Department of Mechanical Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan 44919, Republic of Korea. E-mail: hoonejeong@unist.ac.kr

[b]Department of Mechanical Engineering, Kyungpook National University, Daegu 702-701, Republic of Korea.

Friction measurements of the adhesive samples

The frictional properties of the PEGDMA and PDMS adhesives were measured using custom-built equipment under dry and underwater conditions. The equipment consisted of a dead weight gauge, a load cell (Bongshin, Korea) for friction force measurements, and a motorized movable stage with a chamber for reciprocating motion, sample fixation, and liquid filling. Adhesive samples were fixed at the center of the chamber on the motorized stage. A piece of glass substrate was mounted on the substrate holder connected to the load cell. Then, the fixed adhesives were moved back and forth 10 times for each measurement along the horizontal direction while contacting the glass substrate under a controlled dead weight of 10 N. For friction measurements under wet conditions, the chamber was filled with DI water.

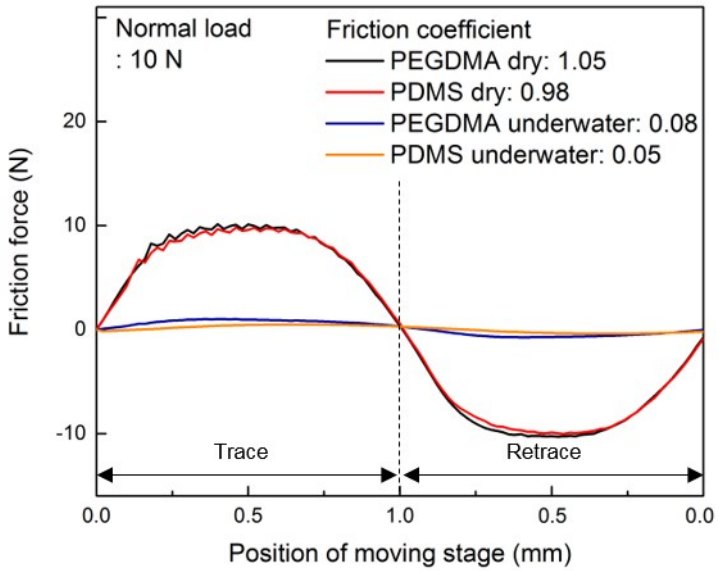

Figure S1. Friction with respect to the moving stage position during a single cycle measurement. A normal load of 10 N was applied with a weight during the measurement.

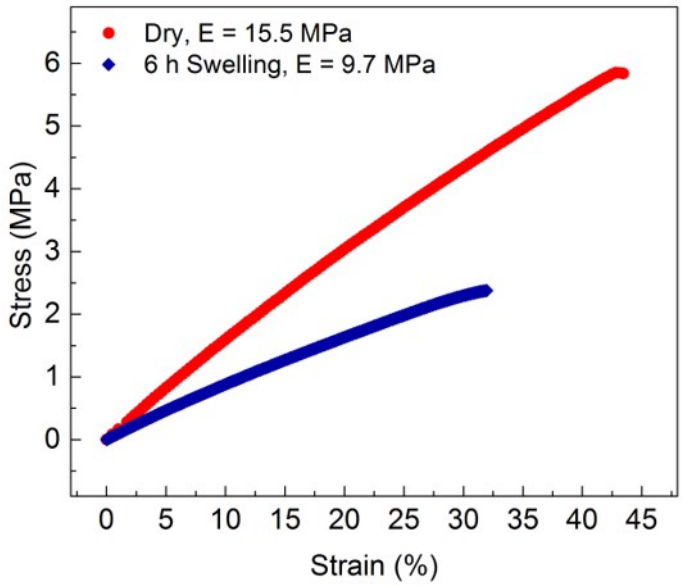

Figure S2. Tensile stress-strain curves of PEGDMA with MW of 750 and 80 wt% concentration (80 wt% PEGDMA and 20 wt% water).

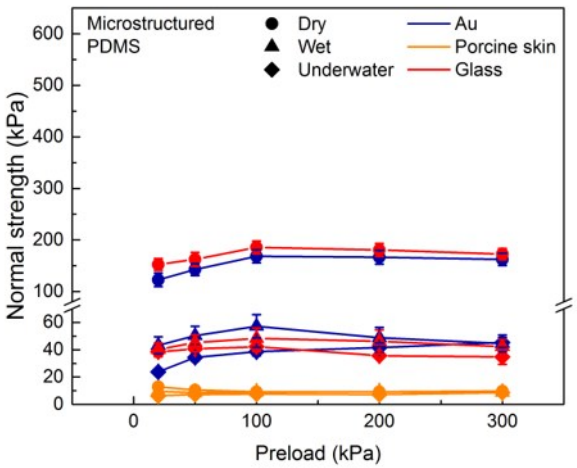

Figure S3. Normal adhesion strengths of the microstructured PDMS adhesives on glass, Au, and porcine skin under the different conditions as a function of the preload.