

Supplementary Information

Measuring the adhesion strength of a thin film to a substrate by centrifugation

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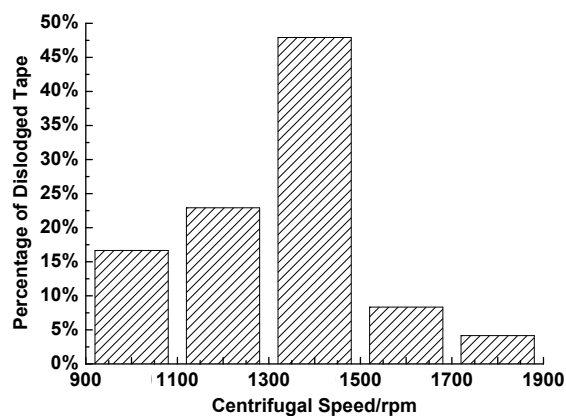


Fig. S1 Histogram of the dislodgment of double-sided adhesive tape within the specified centrifugal speed range.

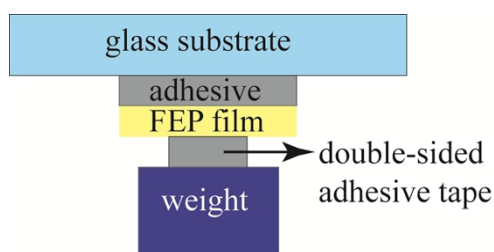


Fig. S2 Scheme of the pull-off test to measure the adhesion strength of double-sided adhesive tape to the FEP substrate.

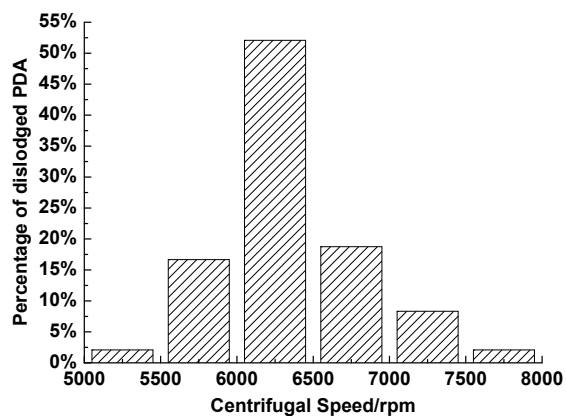


Fig. S3 Histogram of the dislodgment of PDA thin film within the specified centrifugal speed range. The thickness of the PDA thin film was 9.5 nm with dopamine solution deposition time of 3 h.

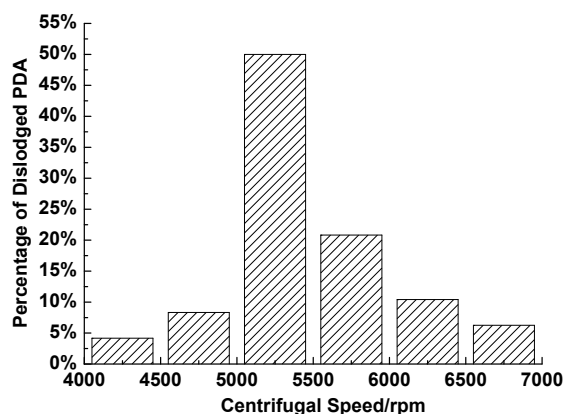


Fig. S4 Histogram of the dislodgment of PDA thin film within the specified centrifugal speed range. The diameter of the PDA thin film was 3.7 mm with the deposition of 20 μL dopamine solution. With this diameter of PDA thin film, the volume of each hydrogel particle (V_{gel}) on each spot of PDA thin film was measured to be 9.8 mm^3 . Using two boundary values 5000 rpm and 5500 rpm, the adhesion strength was determined to be in the range from 1.9 kPa to 2.3 kPa, which was the same as the range for the PDA thin film with the diameter of 3.0 mm.

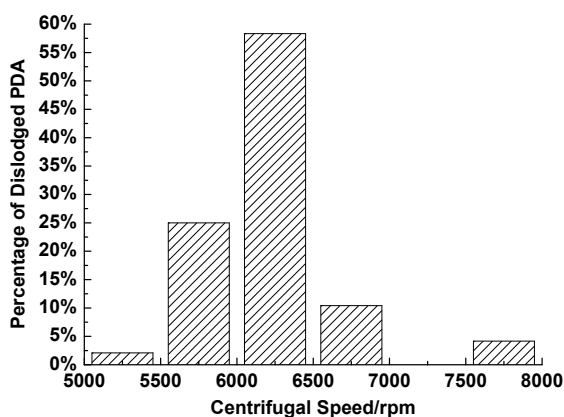


Fig. S5 Histogram of the dislodgment of PDA thin film within the specified centrifugal speed range. The amount of the crosslinker NMBA in the hydrogel is 45 mg/mL , twice the amount of NMBA in the hydrogel in Figure 3.