Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supplementary information

Catechol-free ternary random copolymers for strong and repeatable underwater adhesion

Wenlian Qiu, Yi Huang, He Zhu, Qi Zhang, Shiping Zhu**

School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, Guangdong 518172, P. R. China

*__Correspondence__: qizhang@cuhk.edu.cn (Q. Z.); shipingzhu@cuhk.edu.cn (S. Z.)

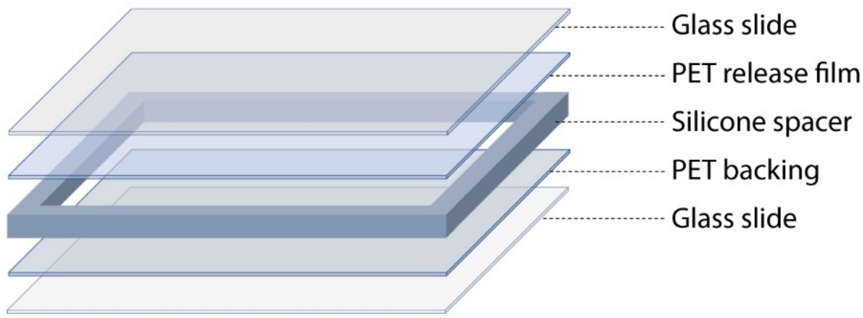

Fig. S1 Illustration of the mold assembly.

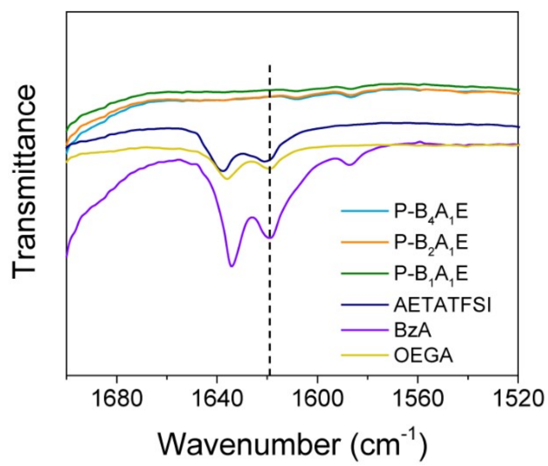

Fig. S2 ATR-FTIR spectra of monomers and P-BAE ternary copolymers at 1700 – 1520 cm^{-1}, where the C=C bond corresponds to the band at 1619 cm^{-1}.

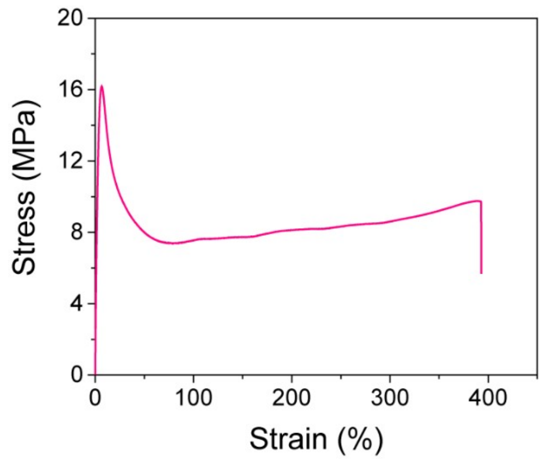

Fig. S3 Tensile stress-strain curve of binary copolymer P-BA.

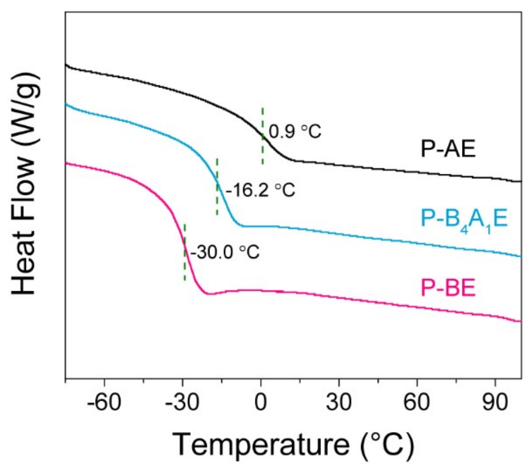

Fig. S4 DSC curves of P-AE, P-BE, and P-B_4A_1E.

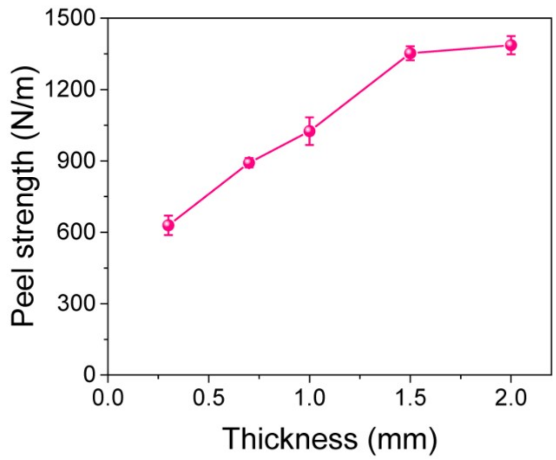

Fig. S5 Peel strength of P-B_4A_1E to PET as a function of copolymer thickness.

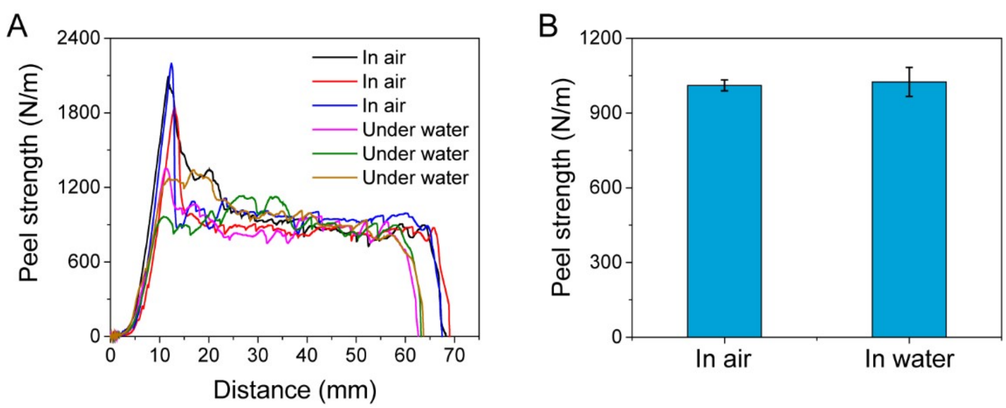

Fig. S6 (A) Peeling strength-distance curves and (B) peeling strength of P-B_4A_1E to PET substrate with attachment processed in air and water.

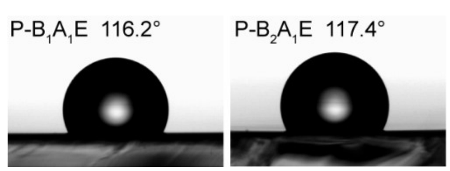

Fig. S7 The water contact angle of P-B_1A_1E and P-B_2A_1E.

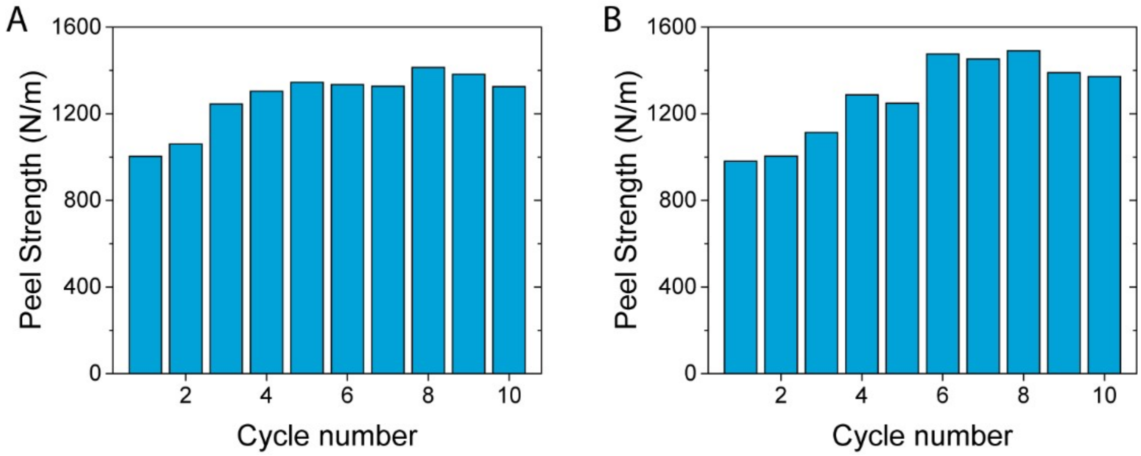

Fig. S8 (A) & (B) Peel strength of P-B_4A_1E to PET substrate for 10 repeats of underwater adhesion performed on specimens prepared in different batches.

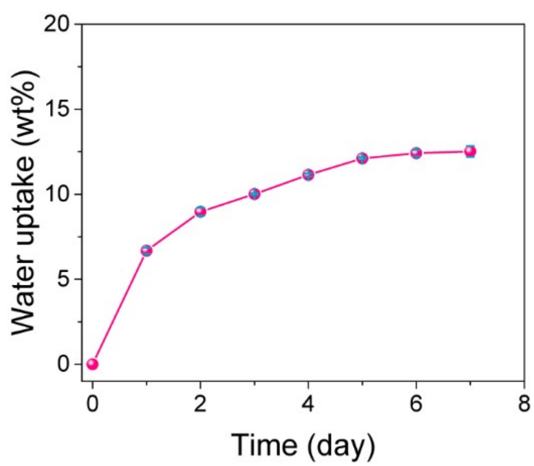

Fig. S9 Water uptake of P-B_4A_1E soaked in water for different times.

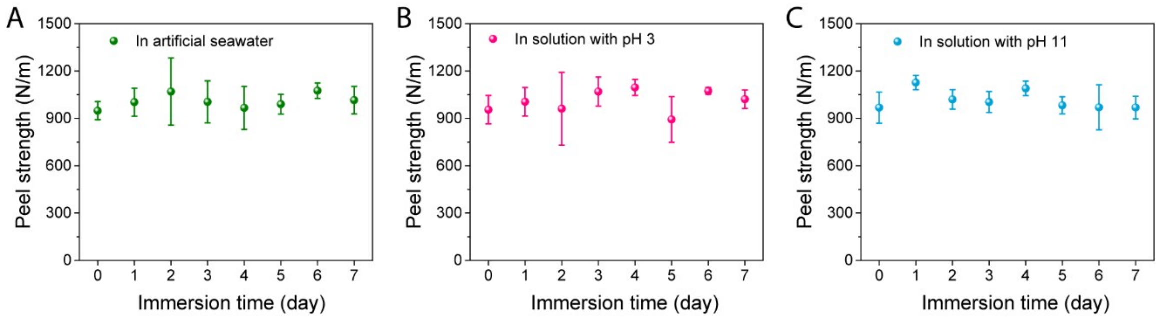

Fig. S10 Peel strength of P-B_4A_1E adhesive to PET substrate as a function of the joints being immersed in different aqueous solutions for different times. (A) In artificial seawater. (B) In acid solution. (C) In basic solution.

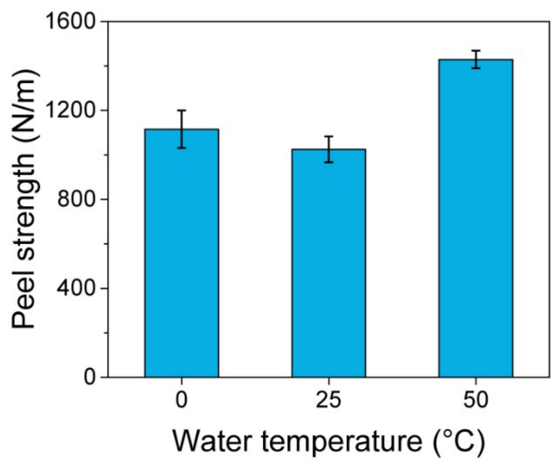

Fig. S11 Peel strength of P-B_4A_1E adhesive to PET substrate with the adhering process underwater with different temperatures.

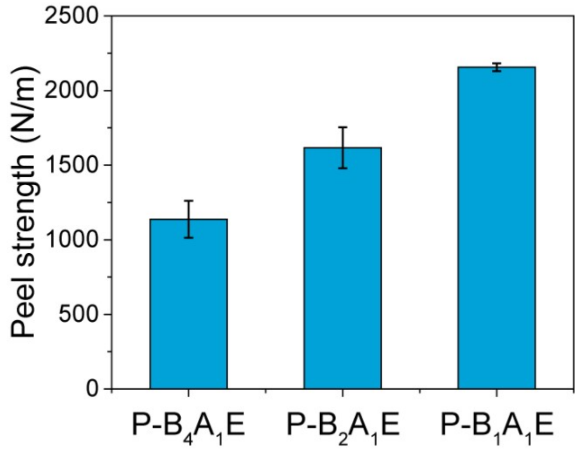

Fig. S12 Peel strength of P-BAE copolymers to glass by processing the adhesion in air.