Electronic Supplementary Material (ESI) for Soft Matter.

Stretchable dual cross-linked silicon elastomer with superhydrophobic surface and fast triple self-healing ability at room temperature

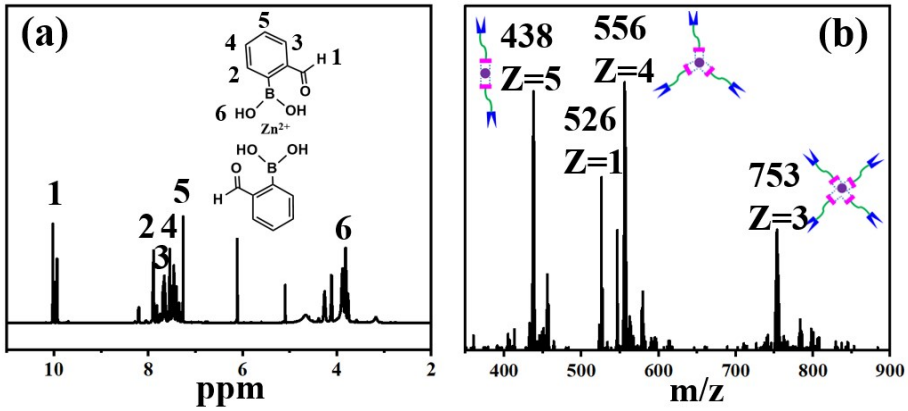

Figure S1. (a) ^{1}H NMR spectra of AP-PDMS and (b) HR-MR spectrum of CHO-Bz.

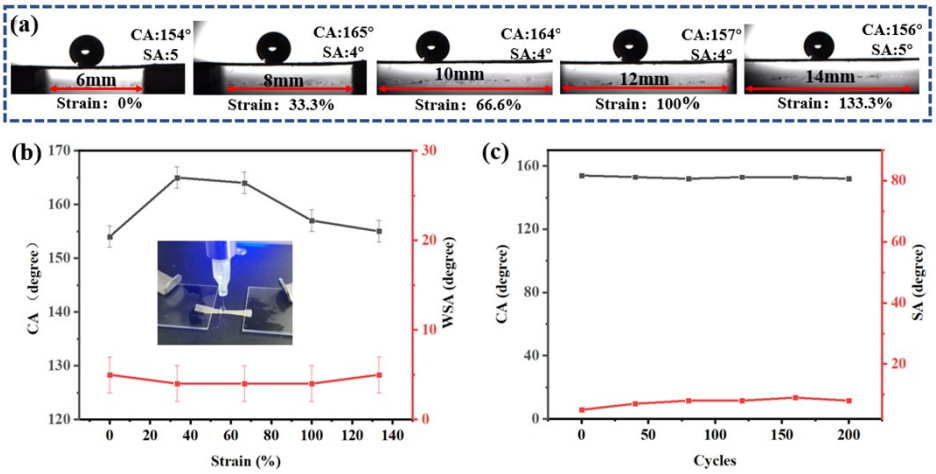

Figure S2. (a) Tensile experiments on HB-imine-BZn-PDMS elastomer. (b) CA and SA values of HB-imine-BZn-PDMS elastomer drawn at different strains; (c) CA and SA values of HB-imine-BZn-PDMS elastomer after 200 cycles of repeated drawing (~ 20% strain).

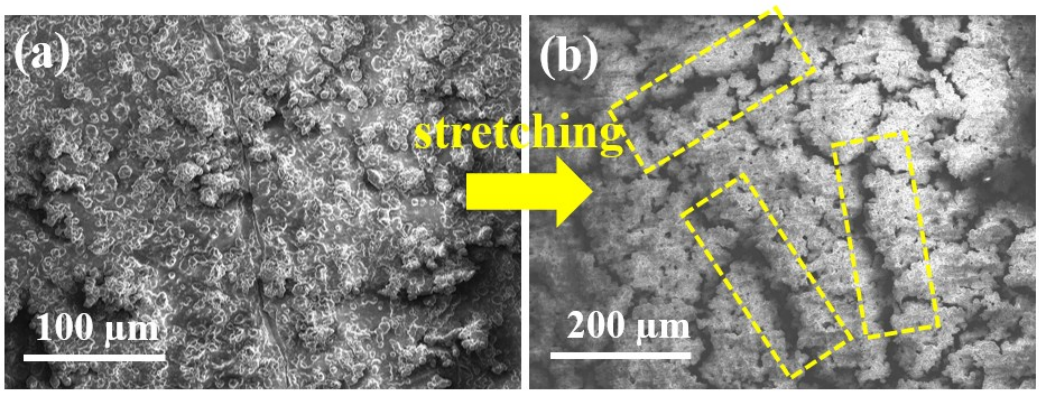

Figure S3. SEM images of (a) surface morphology of HB-imine-BZn-PDMS without stretching, (b) HB-imine-BZn-PDMS elastomer with cracks after stretching.

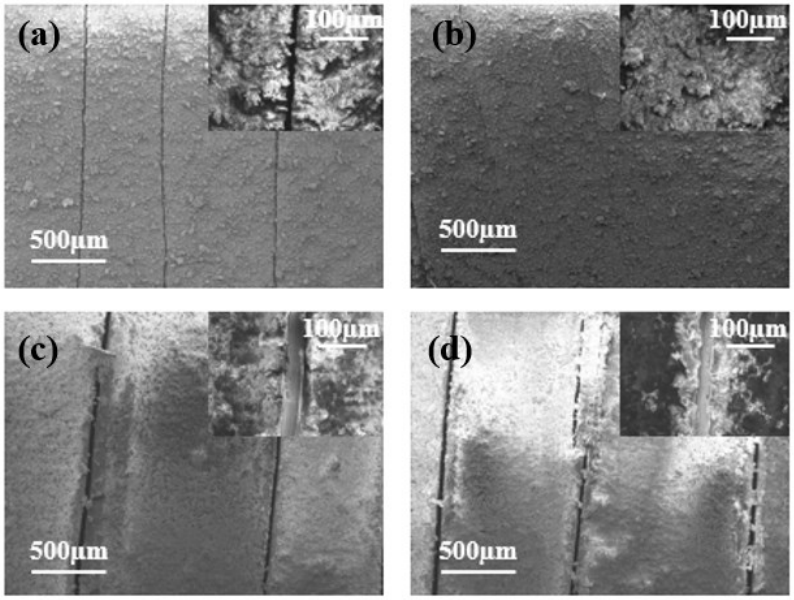

Figure S4. SEM images of (a) HB-imine-BZn-PDMS with ruptures, (b) HB-imine-BZn-PDMS after self-healing at room temperature for 20 min, (c) HB-PDMS with ruptures, (d) HB-PDMS after self-healing at room temperature for 20 min. The ruptures observed before and after self-healing are located in different zones.

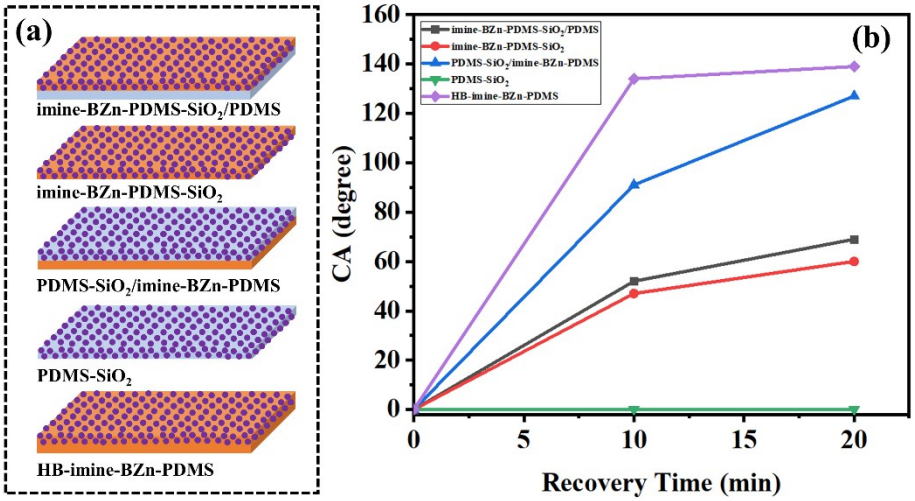

Figure S5. (a) Schematic of imine-BZn-PDMS/SiO_2-PDMS, imine-BZn-PDMS/SiO_2, PDMS/SiO_2-imine-BZn-PDMS, PDMS/SiO_2, HB-imine-BZn-PDMS; (b) Changes in CA during self-healing for imine-BZn-PDMS/SiO_2-PDMS, imine-BZn-PDMS/SiO_2, PDMS/SiO_2-imine-BZn-PDMS, PDMS/SiO_2, HB-imine-BZn-PDMS.