Electronic Supplementary Material

Antifouling and antibacterial hydrogel coatings with self-healing properties based on dynamic disulfide exchange reaction

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*To whom correspondence should be addressed Email addresses: E-mail: iamwjyang@njupt.edu.cn; iamlhwang@njupt.edu.cn 1. Protein adsorption on the hydrogel-functionalized SS surfaces prepared using crosslinker/monomers molar ratio of 1:100 and 100:100



Fig. S1 Protein adsorption of the uncoated SS, SS-PPEGMA and SS-(HEAA-*co*-META) surfaces (The hydrogel-functionalized SS surfaces were prepared with different crosslinker/monomers molar ratio of 1:100 and 100:100)

2. Bacterial fouling assays of the hydrogel-functionalized SS surfaces prepared using crosslinker/monomers molar ratio of 1:100 and 100:100



Fig. S2 Scanning electron microscopy (SEM) images of the (a, a') uncoated SS, (b, b') SS-PPEGMA-C1, (c, c') SS-PPEGMA-C100, (d, d') SS-P(HEAA-*co*-META)-C1, (e, e') SS-P(HEAA-*co*-META)-C100 surfaces before (a-e) and after (a'-e') exposure to *E. coli* (5×10⁷ cells ml⁻¹) for 4 h

3. Self-healing properties of the hydrogel-functionalized SS surfaces prepared using crosslinker/monomers molar ratio of 1:100 and 100:100



Fig. S3 Self-healing behaviour of the hydrogel coatings under optical microscope. (ad) initial intact hydrogel coatings, (a'-d') unhealed hydrogel coating with scratches on the surfaces. (a, a') SS-PPEGMA-C1, (b, b') SS-PPEGMA-C100, (c, c') SS-P(HEAA*co*-META)-C1, (d, d') SS-P(HEAA-*co*-META)-C100 (Scale bar: 50 μm)