Fig. S1 SEM images of (a) TiO2 and (b) g-C3N4.

Fig. S2 XRD spectrum of g-C3N4.

Fig. S3 Contact angles imaging of TSH, CSH, and TCSH-1.

Fig. S4 Solar irradiance intensity during the outdoor testing period.

Fig. S5 Salinity and conductivity test. (a) The linear relationship between salinity and the electrical conductivity of NaCl solutions at 25°C. (b) Salinity of purified water calculated from conductivity measurements.

Fig. S6 SEM images of TCSH-1 initially (a) and after 5 photocatalytic cycles (b).

Scheme S1 A possible mechanism of TCSH for photodegradation MB.