

Electronical Supplementary Information:

Achieving of sandwich-like laminated composite materials for robust superhydrophobicity, rapid photochromism and photo-mask writable media

Guofeng Zhang,[#] Linqi Huang,[#] Fuchao Yang^{*}

Hubei Collaborative Innovation Centre for Advanced Organic Chemical Materials
and Ministry of Education Key Laboratory for the Green Preparation and Application
of Functional Materials, Hubei University, Wuhan 430062, People's Republic of
China

[#]The authors contributed equally to this work.

^{*} The corresponding author: yfc@hubu.edu.cn.

Supplementary Figures' Caption List

Figure S1 XRD patterns of cellulose nanocrystals (abbreviated as CNC) (a), TT (b), and KB (c).

Figure S2 XPS spectra of CNC (a), TT (b) and KB (c).

Figure S3 SEM of KB (a-b) and CNC (c-d).

Figure S4 SEM (a-b) and EDS spectrum (c) of TT.

Figure S5 Optical picture (a) and insulation (b) of TT based sheet (abbreviated as CNC@TT); Optical picture (c) and conductivity (d) of KB based sheet (abbreviated as CNC@KB).

Figure S6 The color of CNC@KB before (left) and after (right) irradiated with ultraviolet light.

Figure S7 Photochromism of CNC@TT.

Figure S8 SEM observation of CNC@KB.

Figure S9 SEM (a-c) and EDS patterns (d) of CNC@TT.

Figure S10 XPS spectra of CNC@TT (a) and CNC@KB (b).

Figure S11 Optical photo of PDMS@TKT cross section.

Figure S12 (a) Super-hydrophilicity of TKT surface; (b) WCA image of water droplets on TKT surface.

Figure S13 WCA (a), SA (b), and low adhesion (c) of water droplets on PDMS@TKT surface.

Figure S14 XPS spectra of TKT(a) and PDMS@TKT(b).

Figure S15 SEM (a-b), EDS spectrum (c) and element mapping (d) of TKT surface.

Figure S16 SEM (a) and elements mapping (b) of PDMS@TKT cross section.

Figure S17 PDMS@TKT is used for encapsulation and dye adsorption. The dye is Rose Bengal B.

Figure S18 Several self-made simple molds.

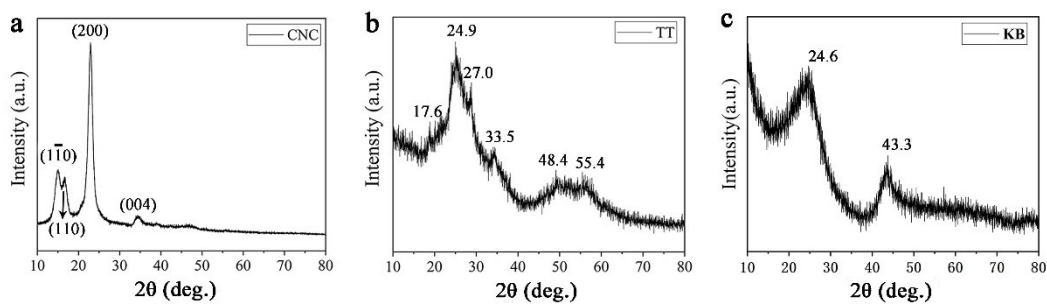


Figure S1 XRD patterns of CNC (a), TT (b), and KB (c).

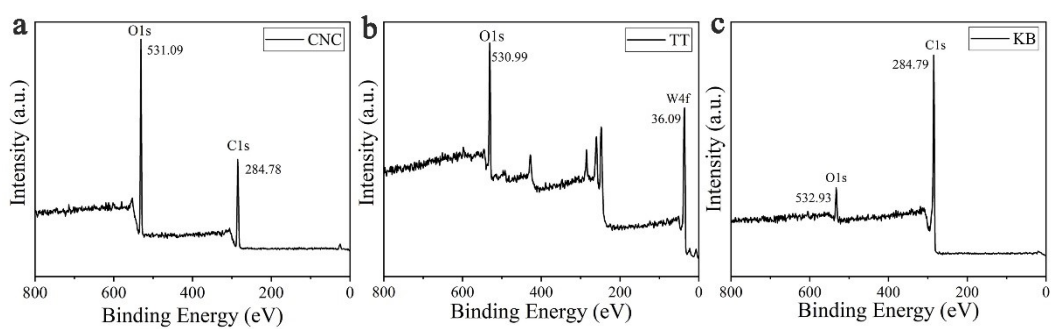


Figure S2 XPS patterns of CNC (a), TT (b) and KB (c).

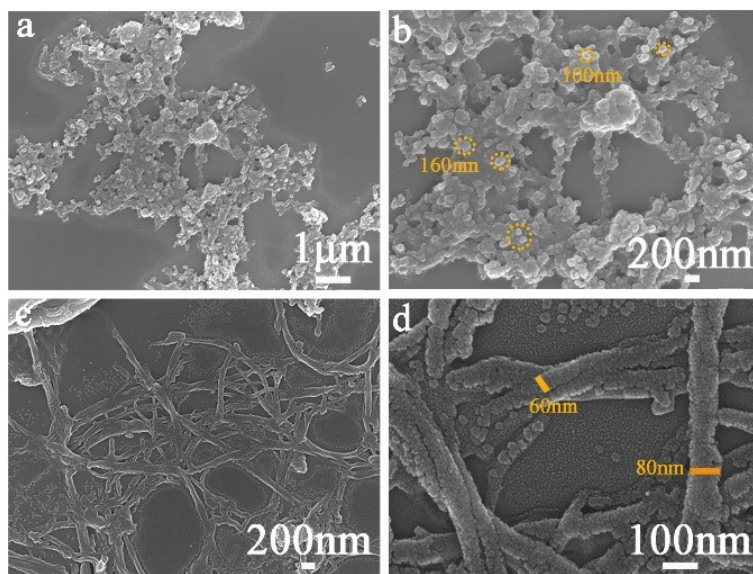


Figure S3 SEM of KB (a-b) and CNC (c-d).

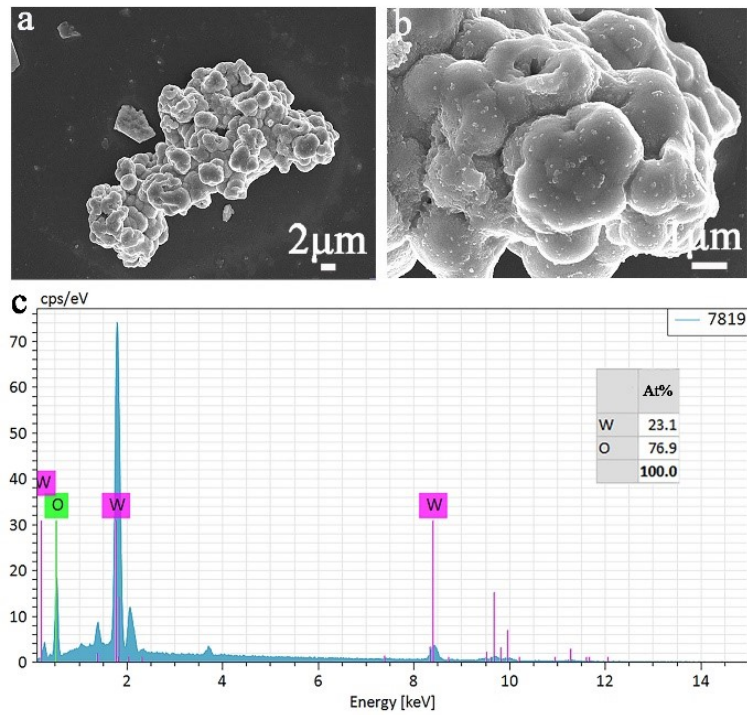


Figure S4 SEM (a-b) and EDS spectrum (c) of TT.

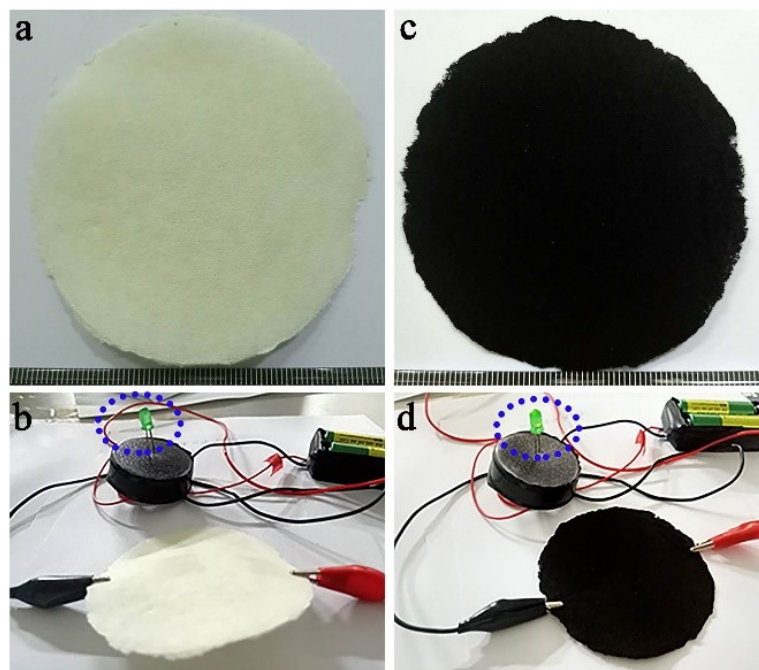


Figure S5 Optical picture (a) and insulation (b) of CNC@TT; Optical picture (c) and conductivity (d) of CNC@KB.

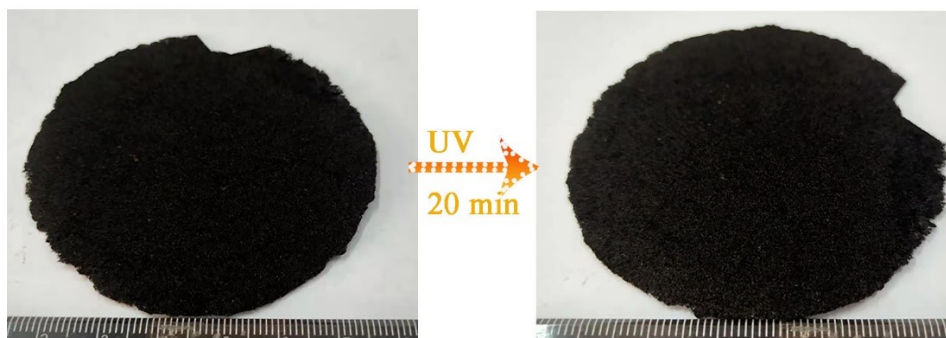


Figure S6 The color of CNC@KB before (left) and after (right) irradiated with ultraviolet light.

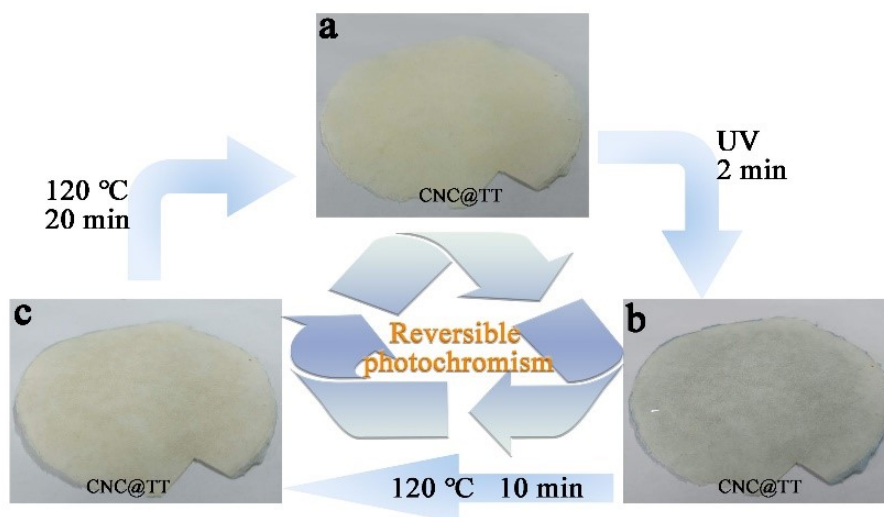


Figure S7 Photochromism of CNC@TT.

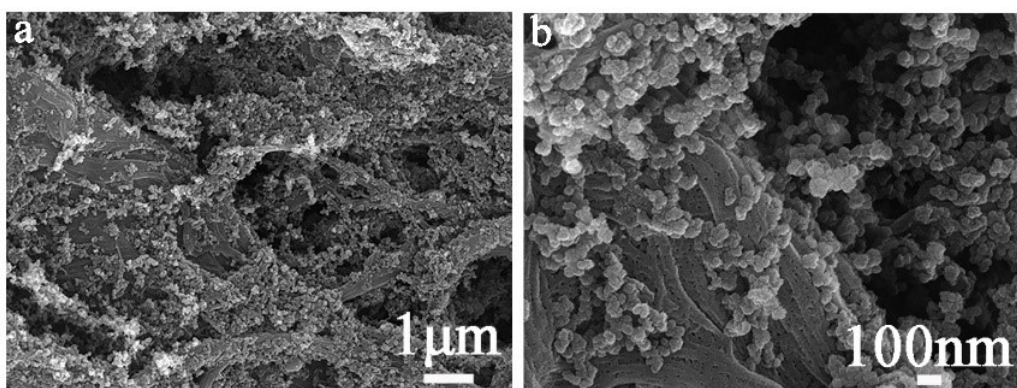


Figure S8 SEM observation of CNC@KB.

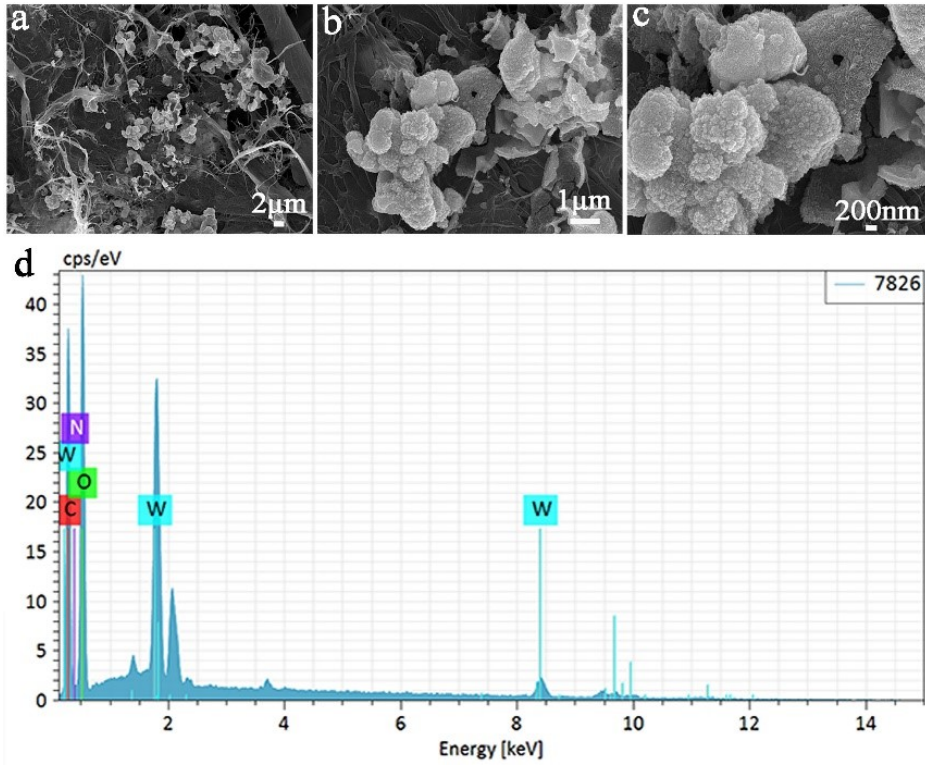


Figure S9 SEM (a-c) and EDS patterns (d) of CNC@TT.

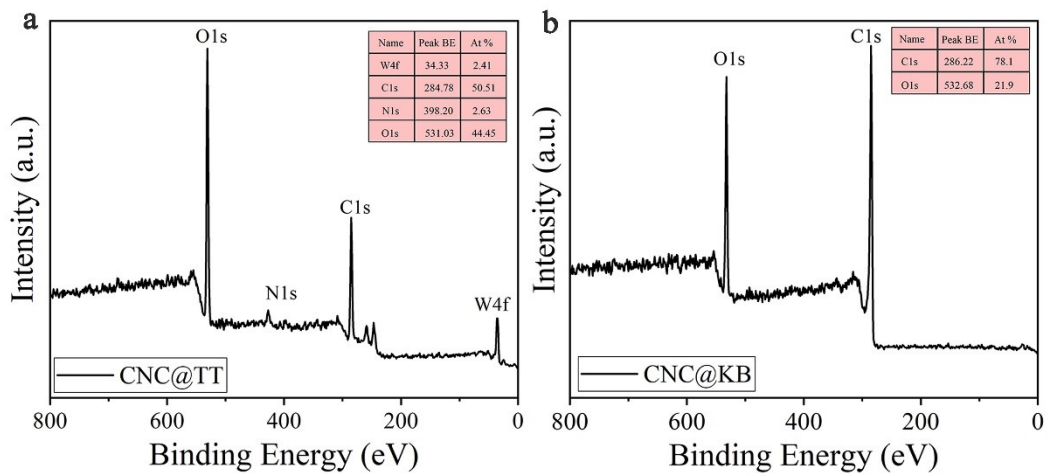


Figure S10 XPS spectra of CNC@TT (a) and CNC@KB (b).

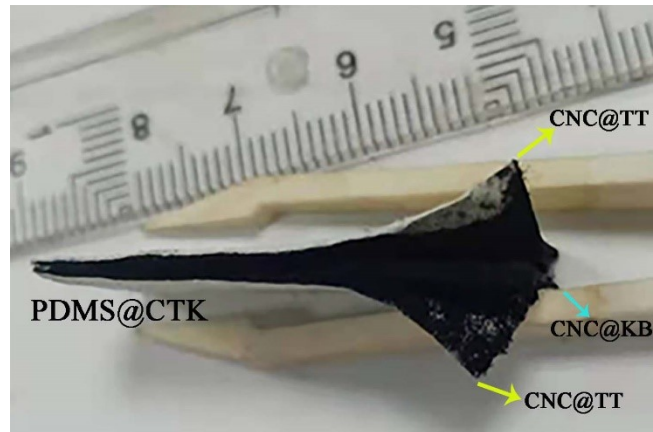


Figure S11 Optical photo of PDMS@TKT cross section.

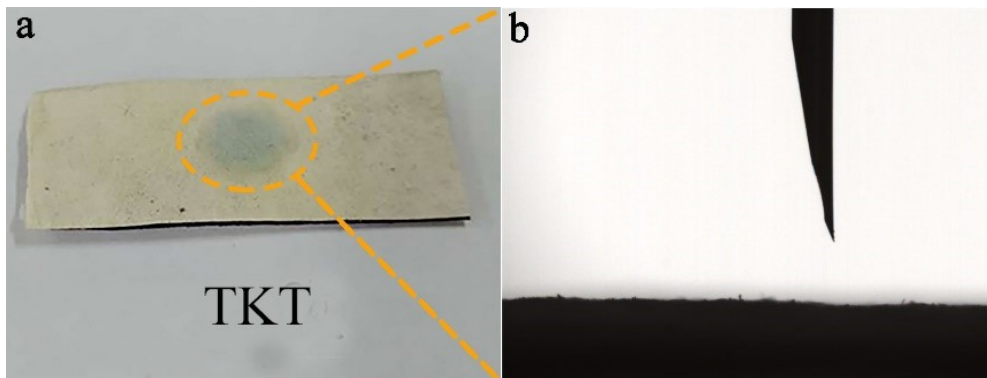


Figure S12 (a) Super-hydrophilicity of TKT surface; (b) WCA image of water droplets on TKT surface.

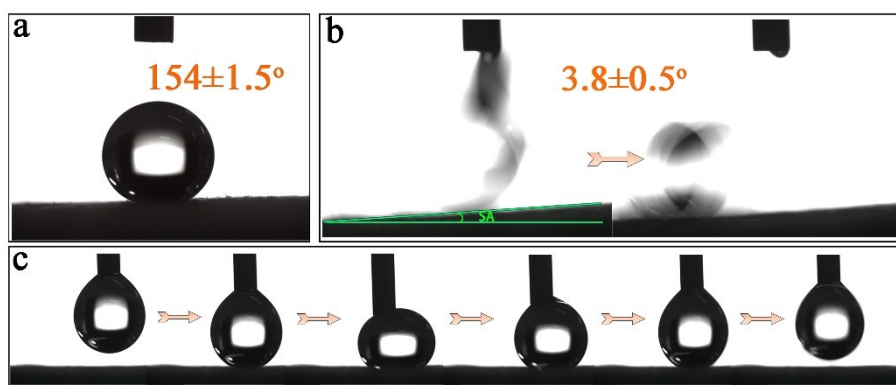


Figure S13 WCA (a), SA (b), and low adhesion (c) of water droplets on PDMS@TKT surface.

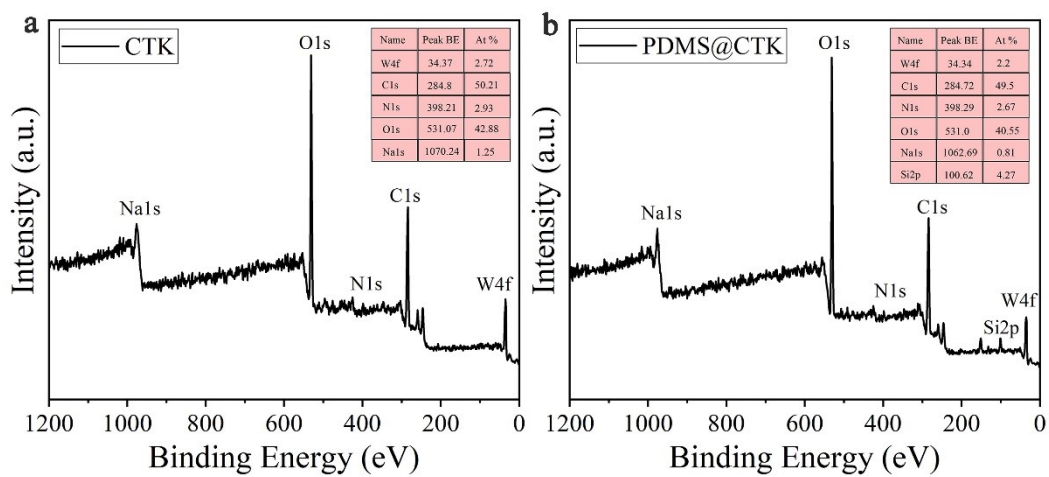


Figure S14 XPS spectra of TKT(a) and PDMS@TKT(b).

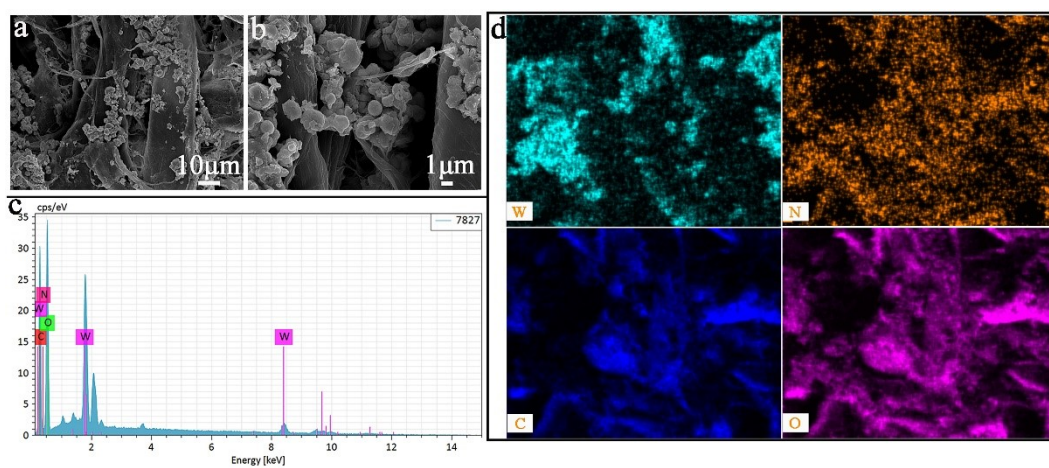


Figure S15 SEM (a-b), EDS spectrum (c) and element mapping (d) of TKT surface.

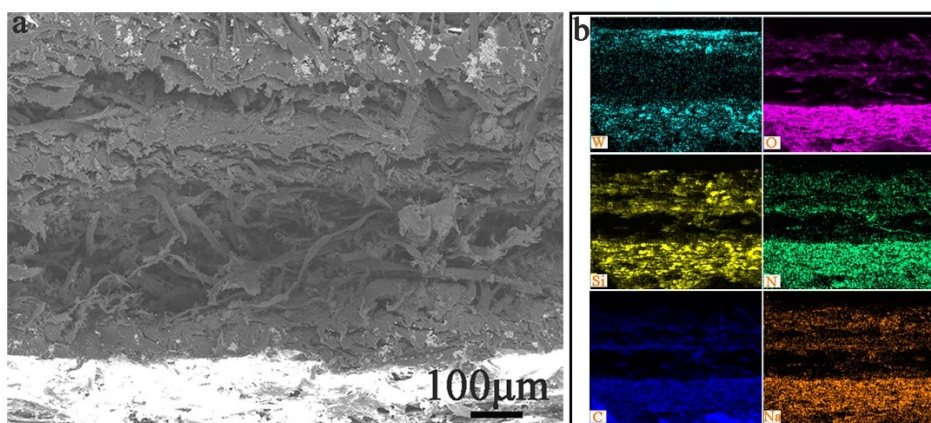


Figure S16 SEM (a) and element mapping (b) of PDMS@TKT cross section.

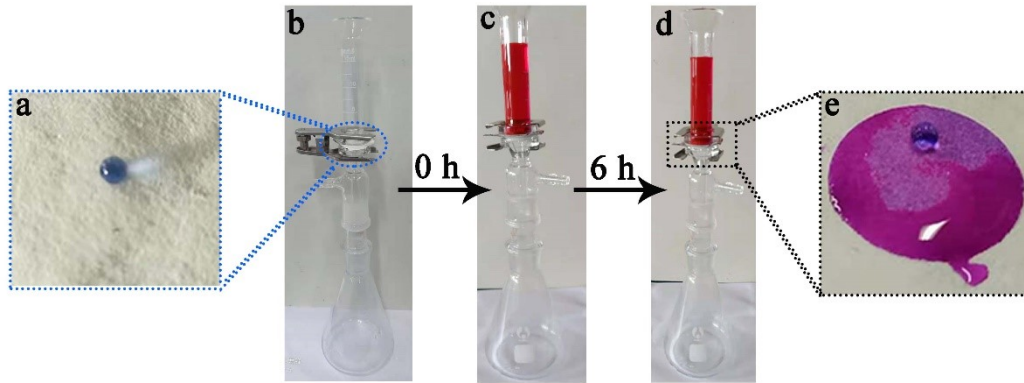


Figure S17 PDMS@TKT is used for encapsulation and dye adsorption. The dye is Rose Bengal B.

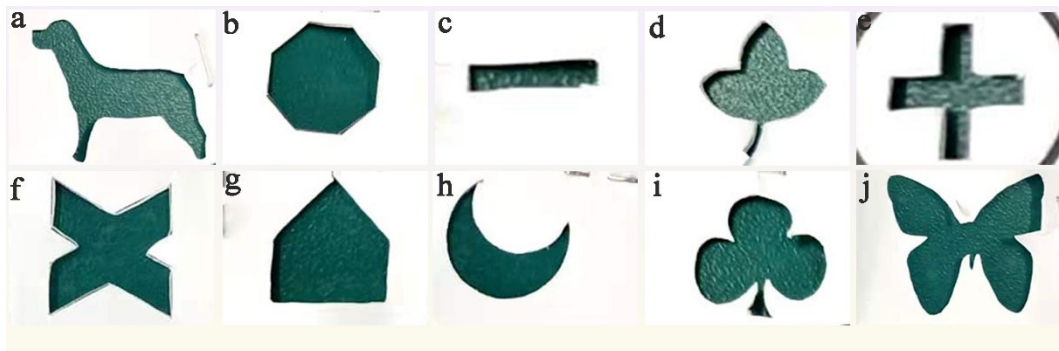


Figure S18 Several self-made simple molds.