

Supporting Information

Facile ZIF-7 Coating on Cotton Substrate with Sustained Iodine Release as an Effective Antibacterial Textile

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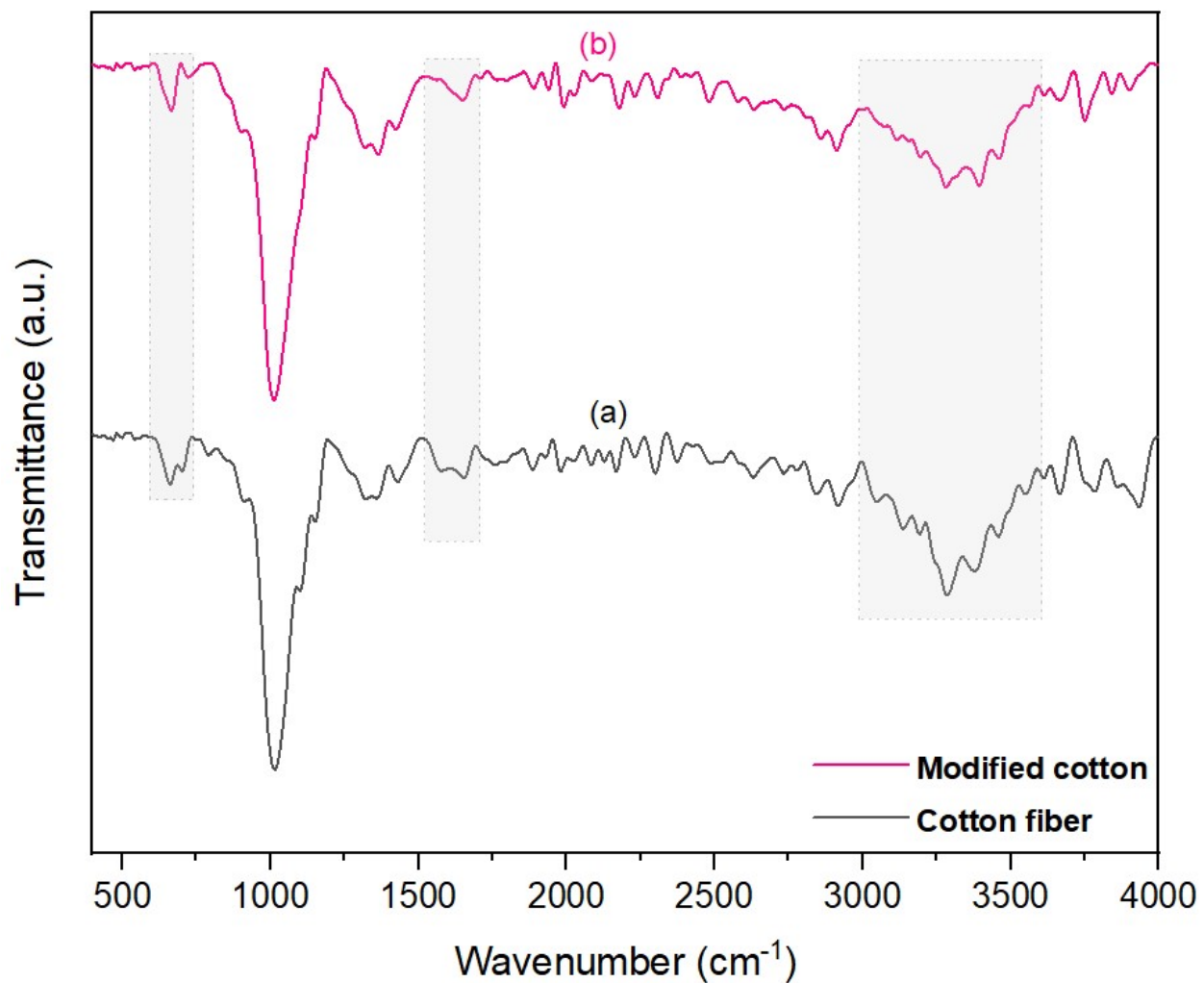


Fig. S1. FT-IR spectra of a) pure cotton fibers and b) modified cotton fibers (carboxymethylated).

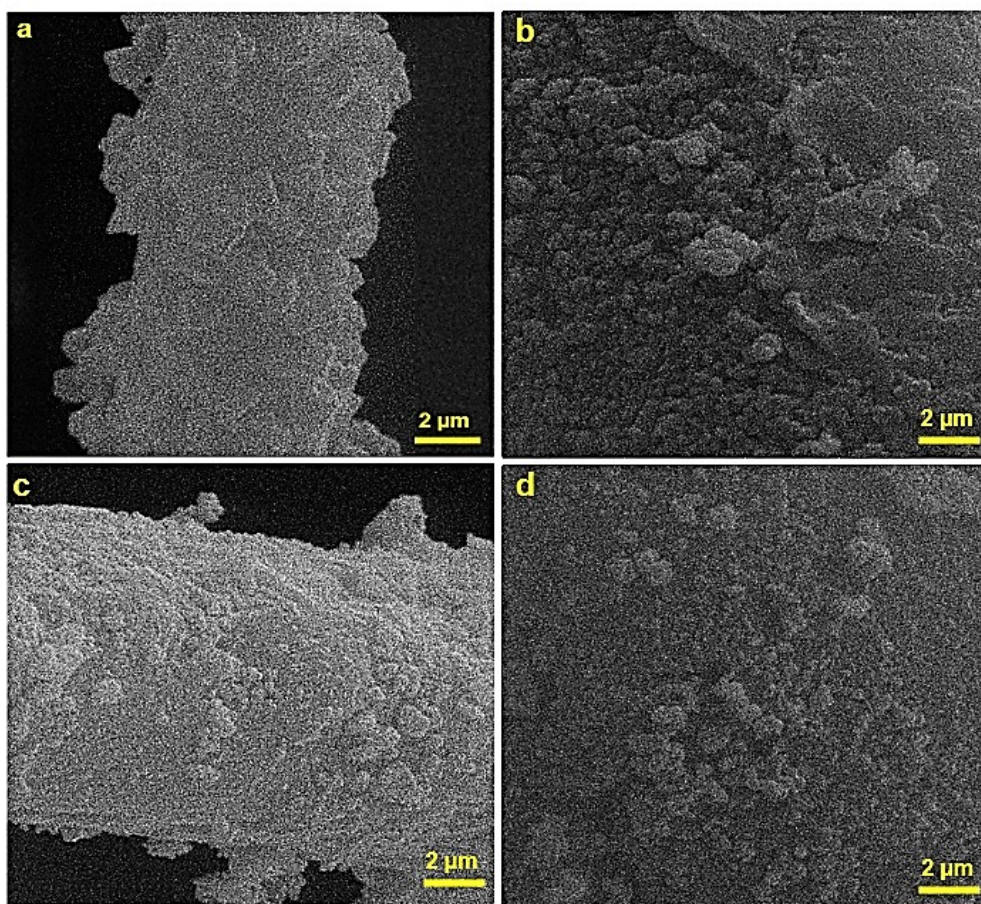


Fig. S2. FE-SEM images of a) ZIF-7@cotton (**1**), b) ZIF-7@cotton (**2**), c) I₂@ZIF-7@cotton (I₂@**1**), and d) I₂@ZIF-7@cotton (I₂@**2**) with scale bar 2 μm.

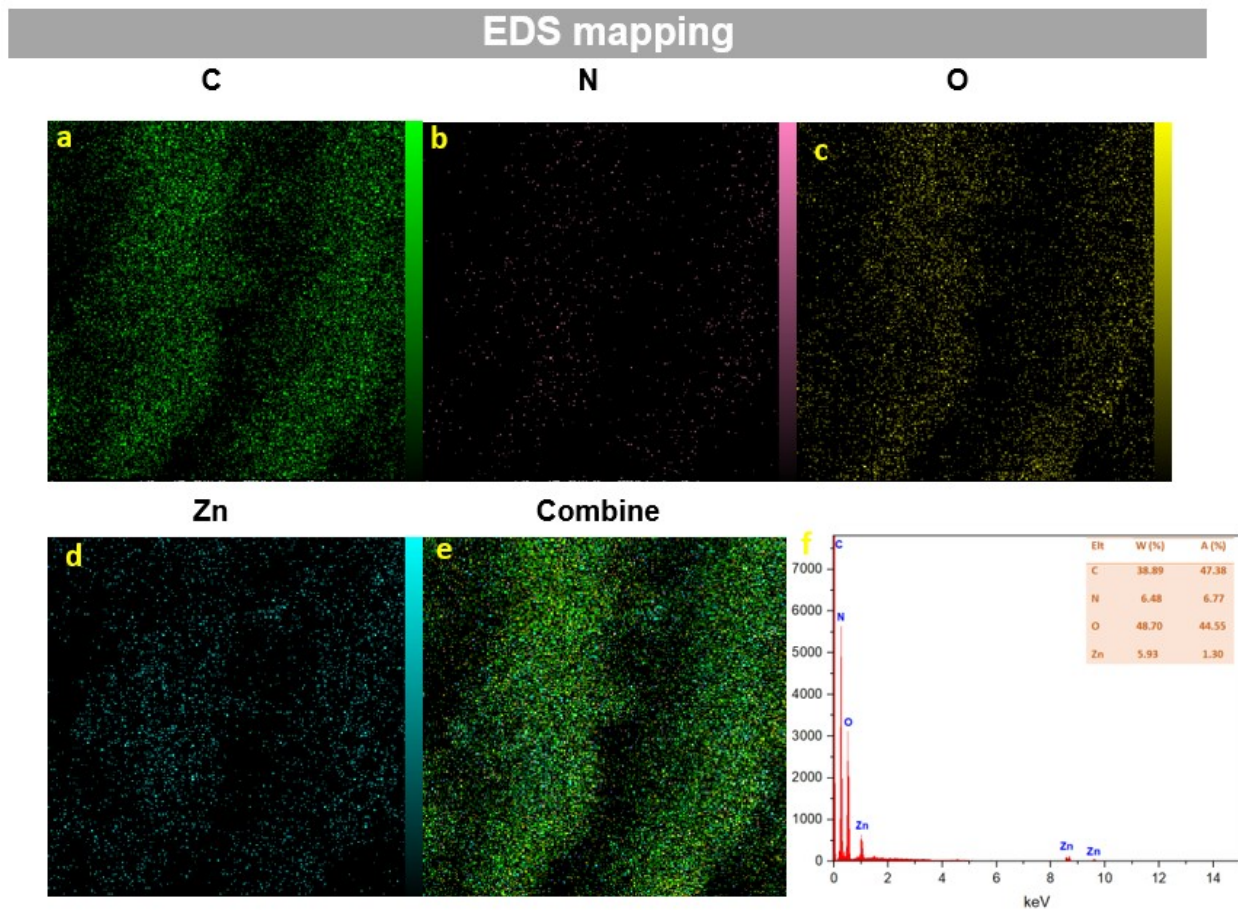


Fig. S3. (a–e) EDS mapping and (f) EDS spectrum of ZIF-7@cotton (1).

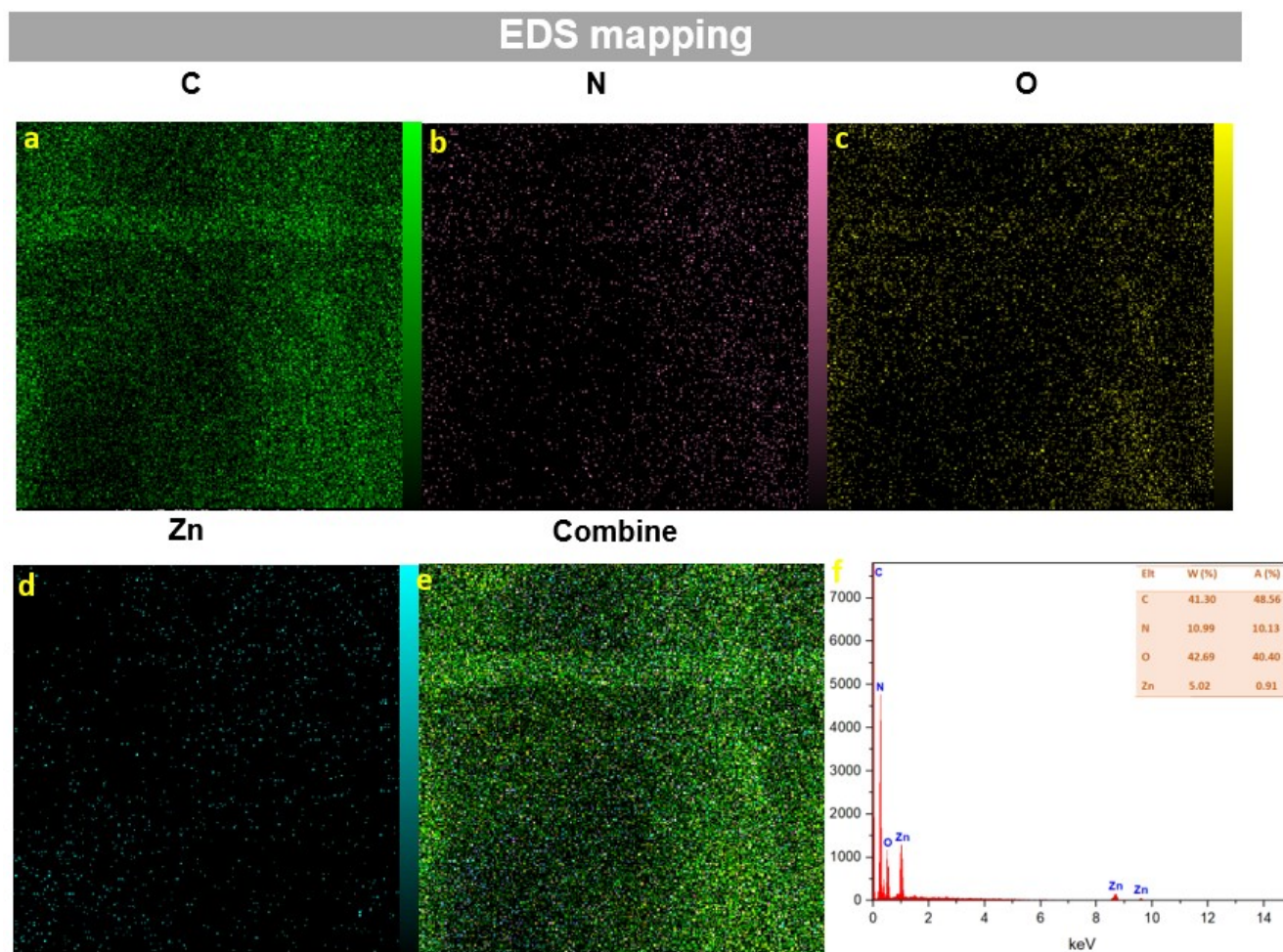


Fig. S4. (a–e) EDS mapping and (f) EDS spectrum of ZIF-7@ cotton (2).

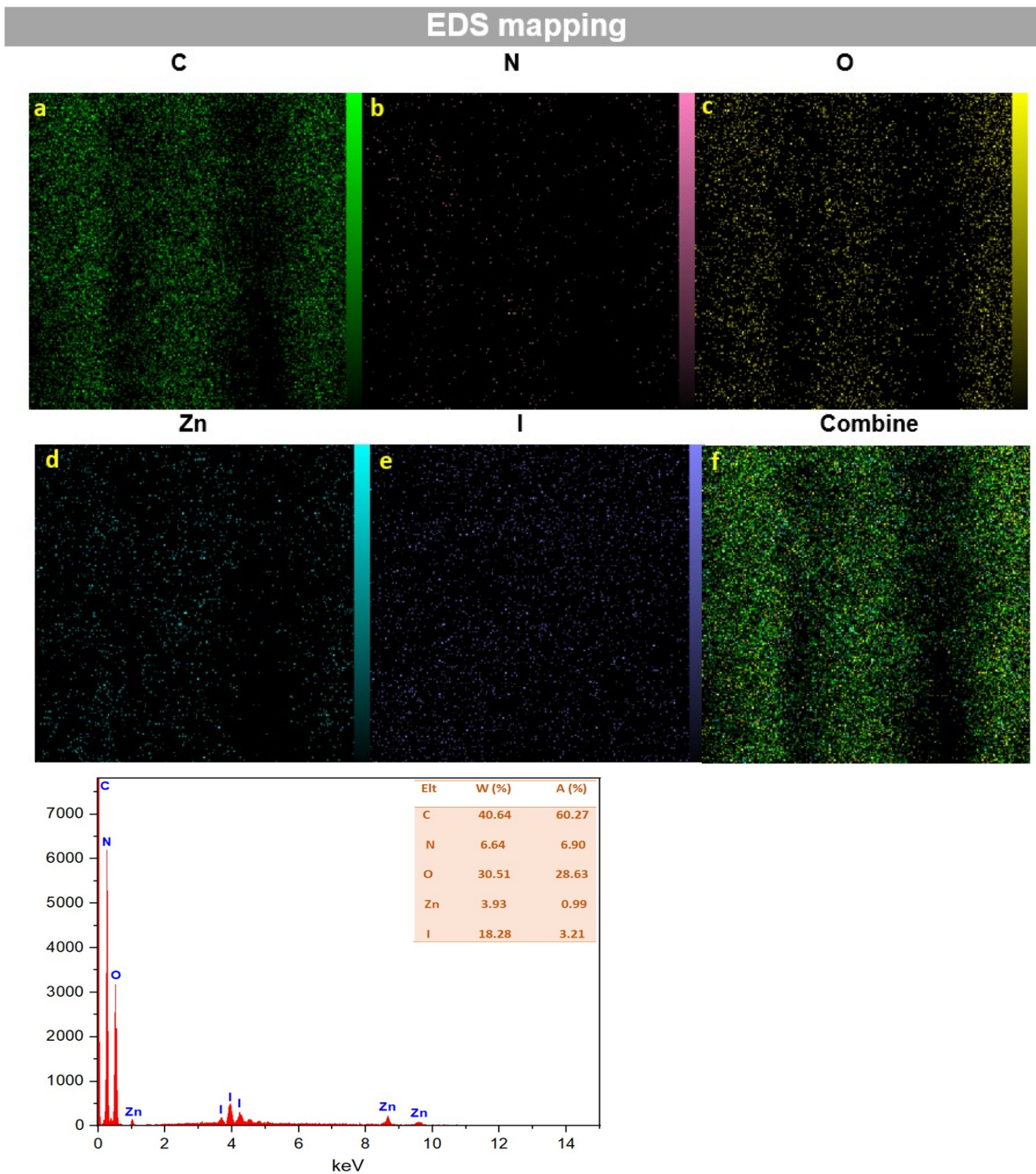


Fig. S5. (a–f) EDS mapping and (g) EDS spectrum of $I_2@ZIF-7@$ cotton ($I_2@1$) after iodine loading.

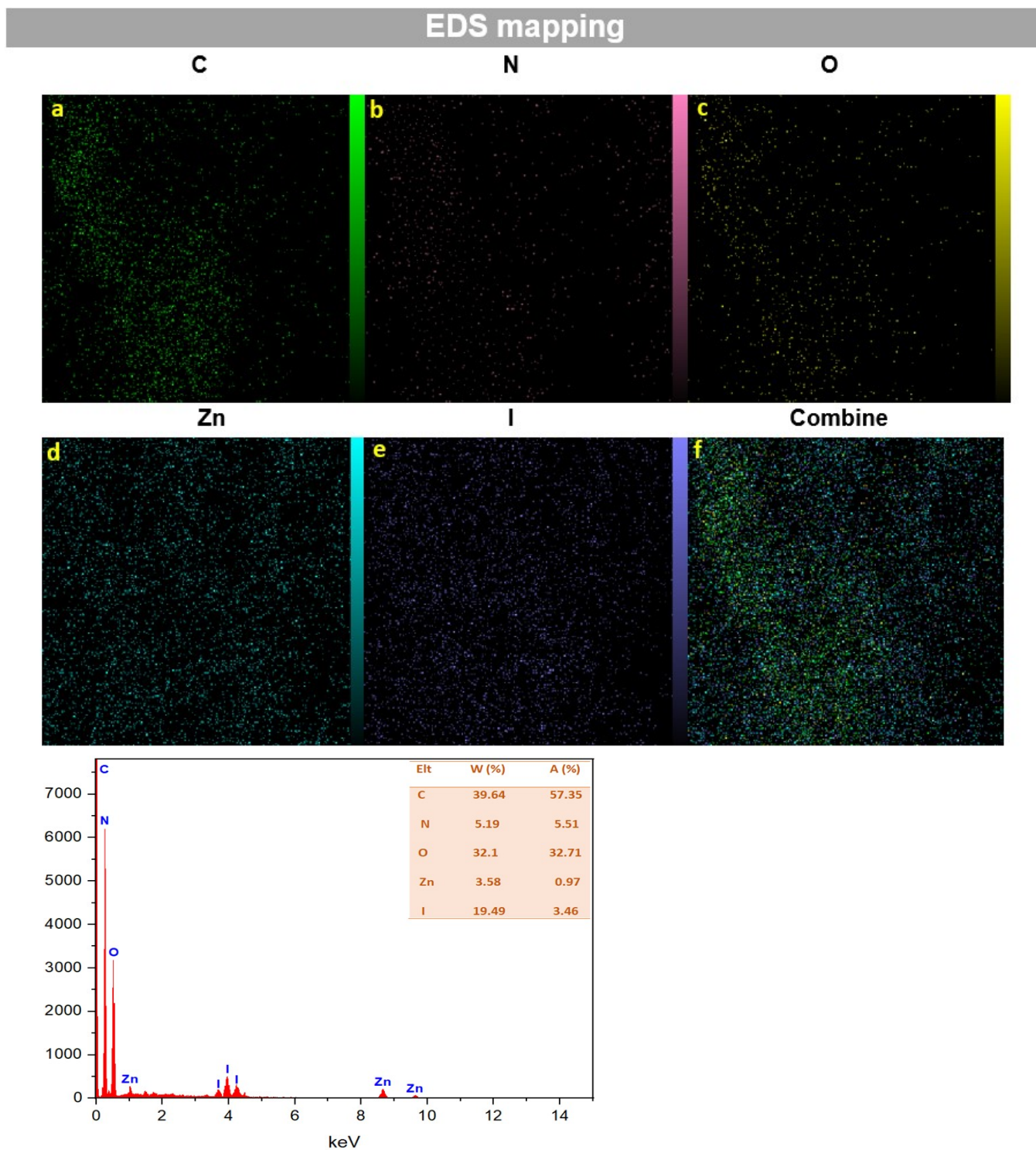


Fig. S6. (a–f) EDS mapping and (g) EDS spectrum of $I_2@ZIF-7@cotton$ ($I_2@2$) after iodine loading.



Fig. S7. Color change photograph of cotton fibers which were soaked in I_2 cyclohexane solution (3 mL, 0.0025 M).

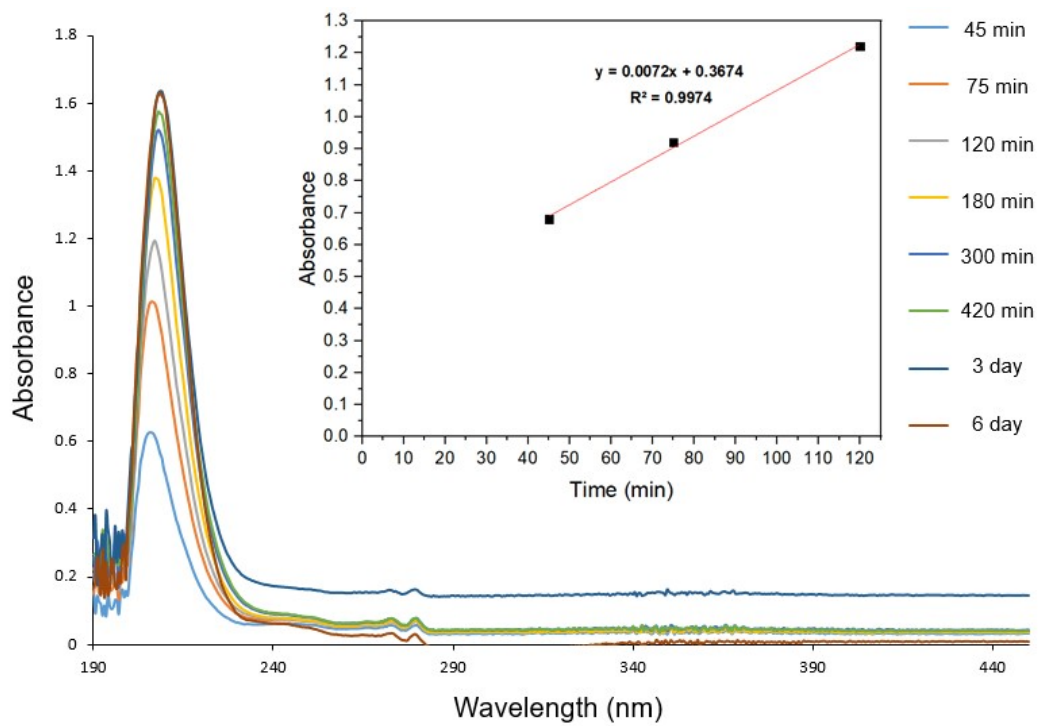


Fig. S8. The UV/vis spectra of ZIF-7 for the releasing process of iodine in ethanol; absorption curve vs. time.

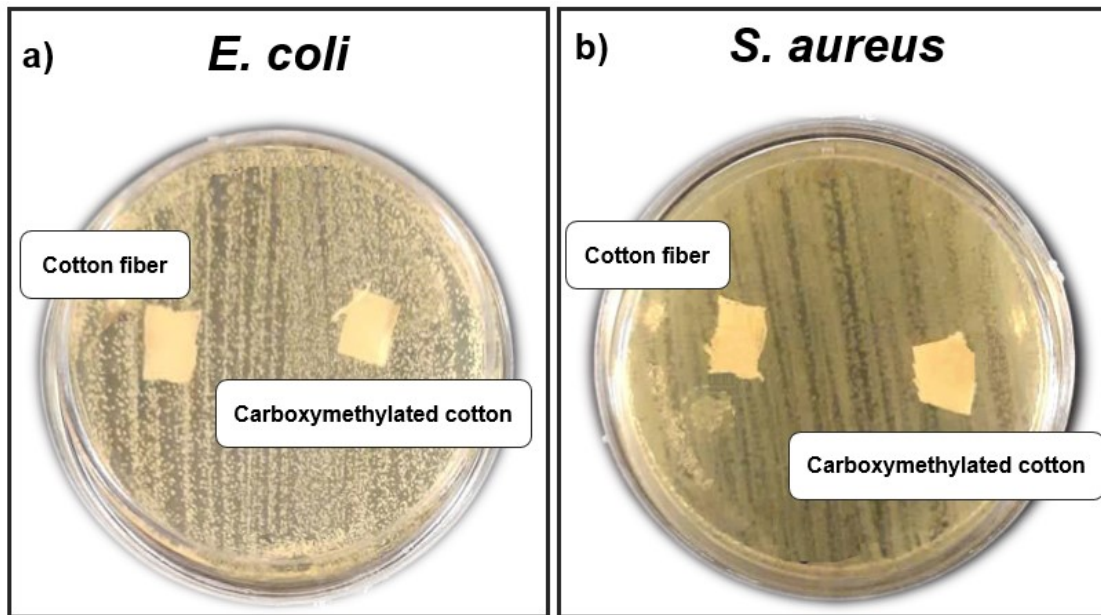


Fig. S9. Antibacterial activity of cotton fibers and carboxymethylated cotton fibers against a) *E. coli* and b) *S. aureus* strains.

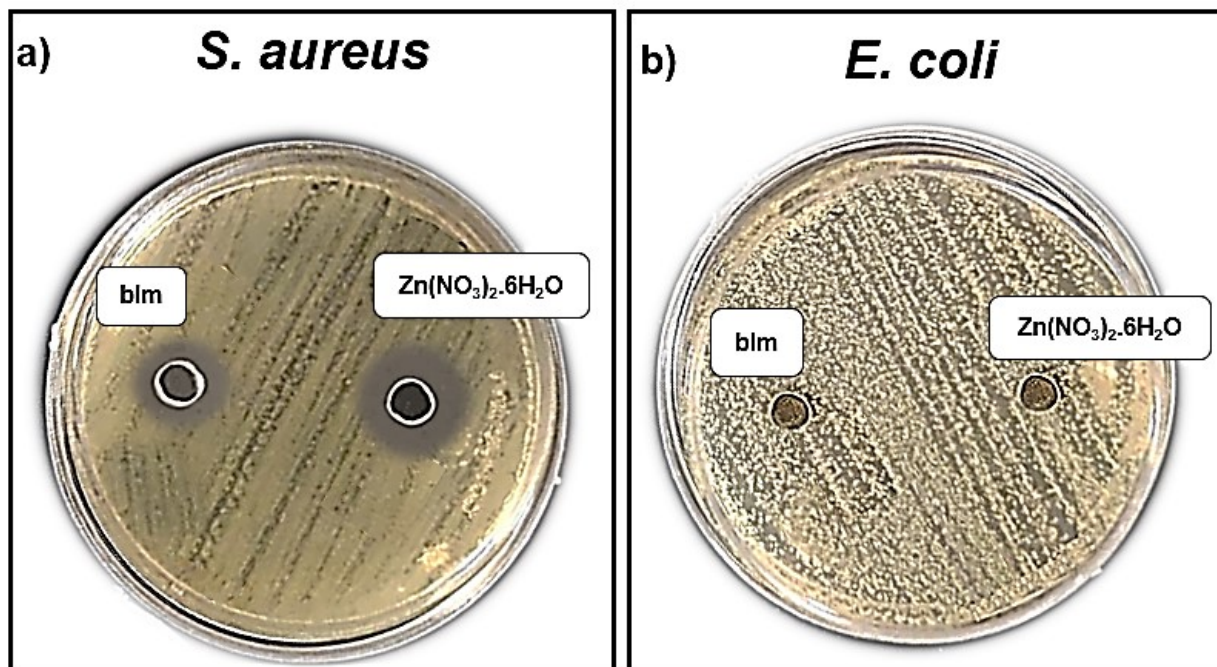


Fig. S10. Antibacterial activity of Zn(NO₃)₂·6H₂O and benzimidazole (blm) against a) *S. aureus* and b) *E. coli* strains.

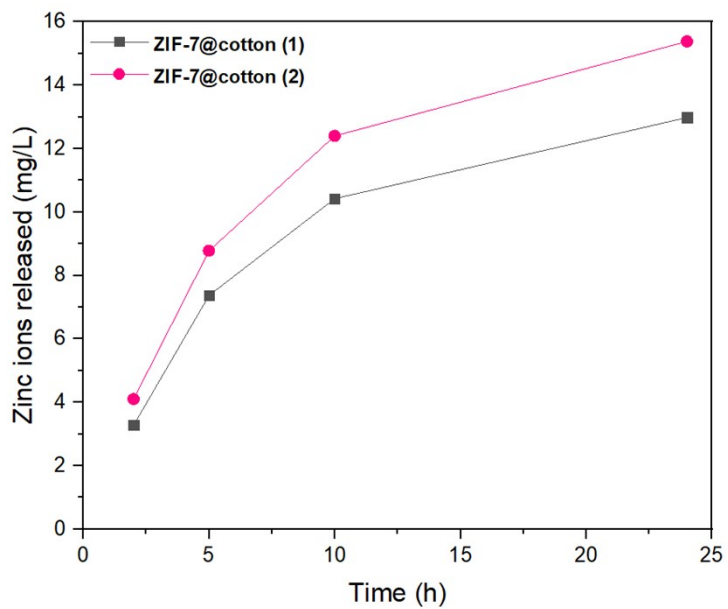


Fig. S11. Release of Zn^{2+} cations from ZIF-7@cotton (1) and ZIF-7@cotton (2) in the antibacterial medium.