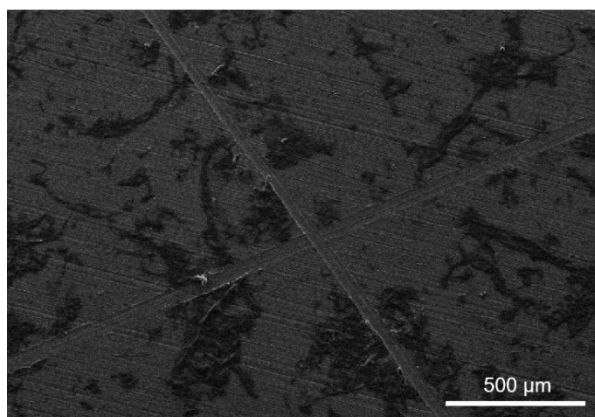


## Supporting Information

TC4



FSL

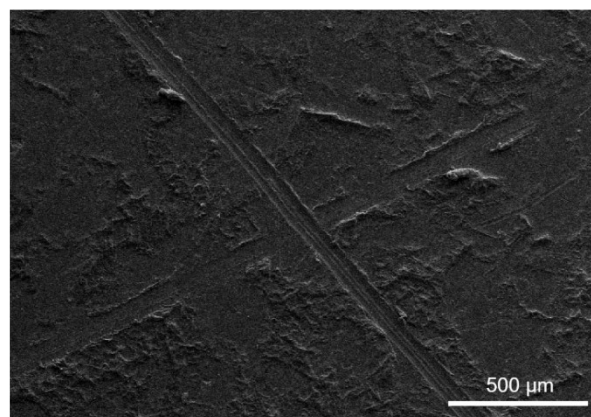
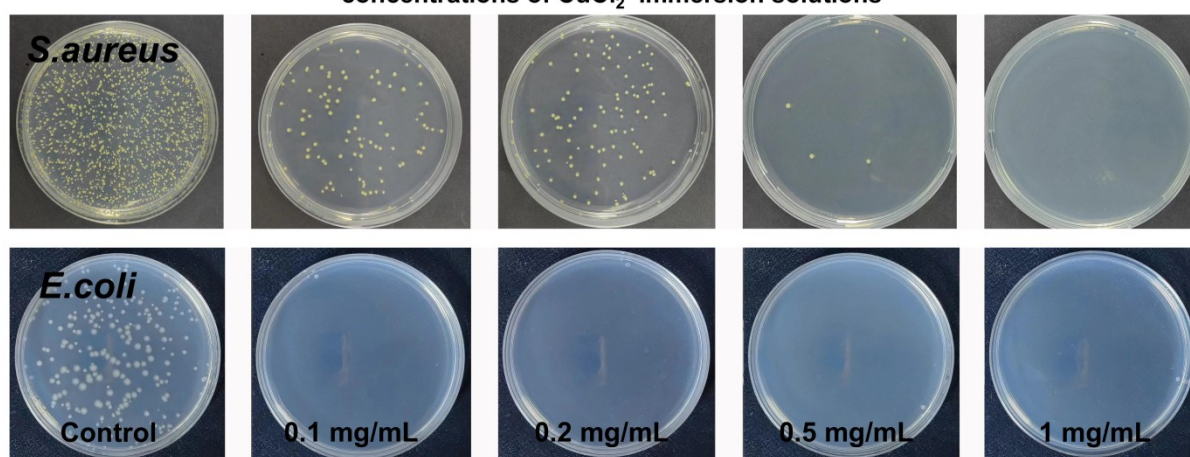


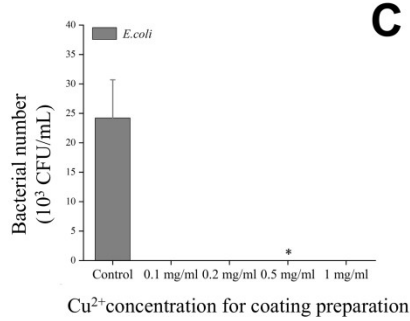
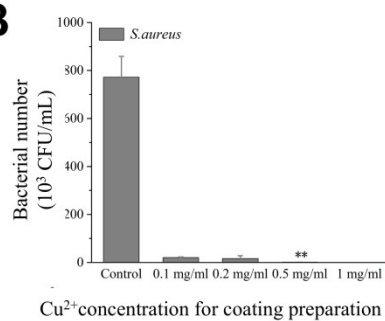
Fig. S1 Bonding strength test between the coating and substrates.

**A**

**Bacterial colonies after co-culturing with surface coatings prepared under different concentrations of  $\text{CuCl}_2$  immersion solutions**



**B**



**C**

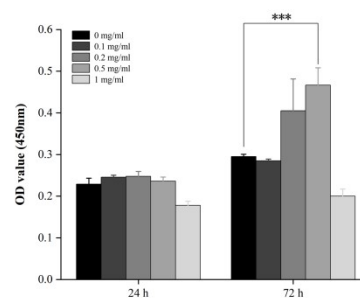


Fig. S2 A) Bacterial colony plate counting test of the PVA-TP-CA/Cu@TC4 prepared under different  $\text{CuCl}_2$  immersion solutions. Statistical analysis of the colonies of B) *S. aureus* and C) *E. coli*. D) Cell viability of BMSCs on the PVA-TP-CA/Cu@TC4 prepared under different  $\text{CuCl}_2$  immersion concentrations.

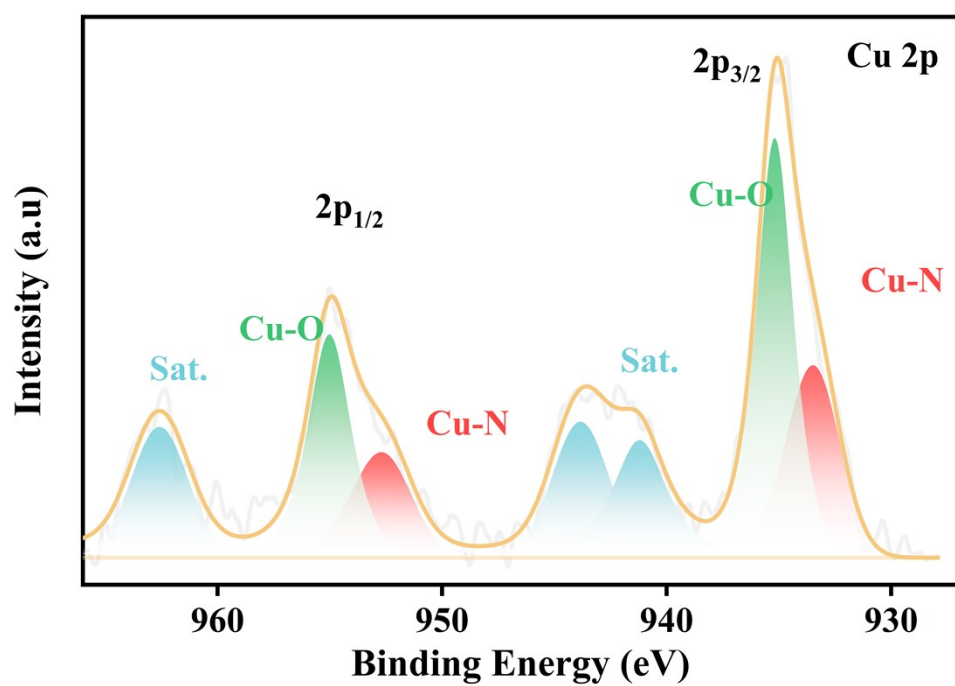


Fig. S3 The XPS of Cu in the PVA-TP-CA/Cu@TC4 coating prepared under 0.5 mg/mL  $\text{CuCl}_2$  immersion solutions.