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Supplementary Material

NIR Light-Driven $AgBiS_2$@ZIF-8 Hybrid Photocatalysts for Rapid Bacteria-Killing

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It could be seen from Fig. S1 that the water contact angle of the polished Ti plates was 112.86 °. The surface of Ti formed a slight network structure after alkali treatment, which improved the hydrophilicity of the Ti plates (90.7 °). The network structure was conducive to the coating of $AgBiS_2$ precursor. The water contact angle (137.4 °) of $AgBiS_2$/Ti was much higher than that of Ti-OH, which might be caused by the lotus leaf effect of nanorods[1, 2]. It was worth noting that after loading ZIF-8, the hydrophilicity of the material was significantly improved (50.8 °), and the improvement of wettability was good for tissue adhesion.

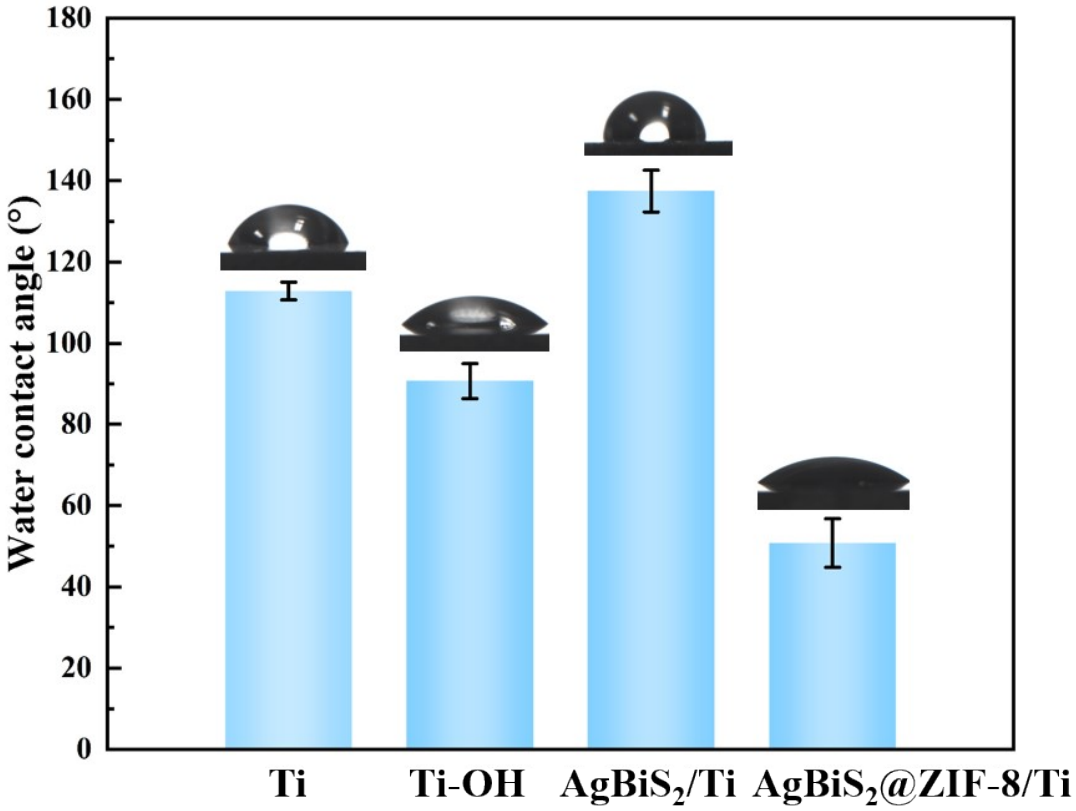

Fig. S1. Water contact angles of Ti, Ti-OH, $AgBiS_2$/Ti and $AgBiS_2$@ZIF-8/Ti.

Fig. S2 showed the UV-visible absorption spectra of all the as-prepared samples. From Fig. S2, it could be observed that ZIF-8 showed strong absorption at about 260 nm, which was attributed to the characteristic absorption peak of ZIF-8. ZIF-8 had the band gap at 5.07 eV.

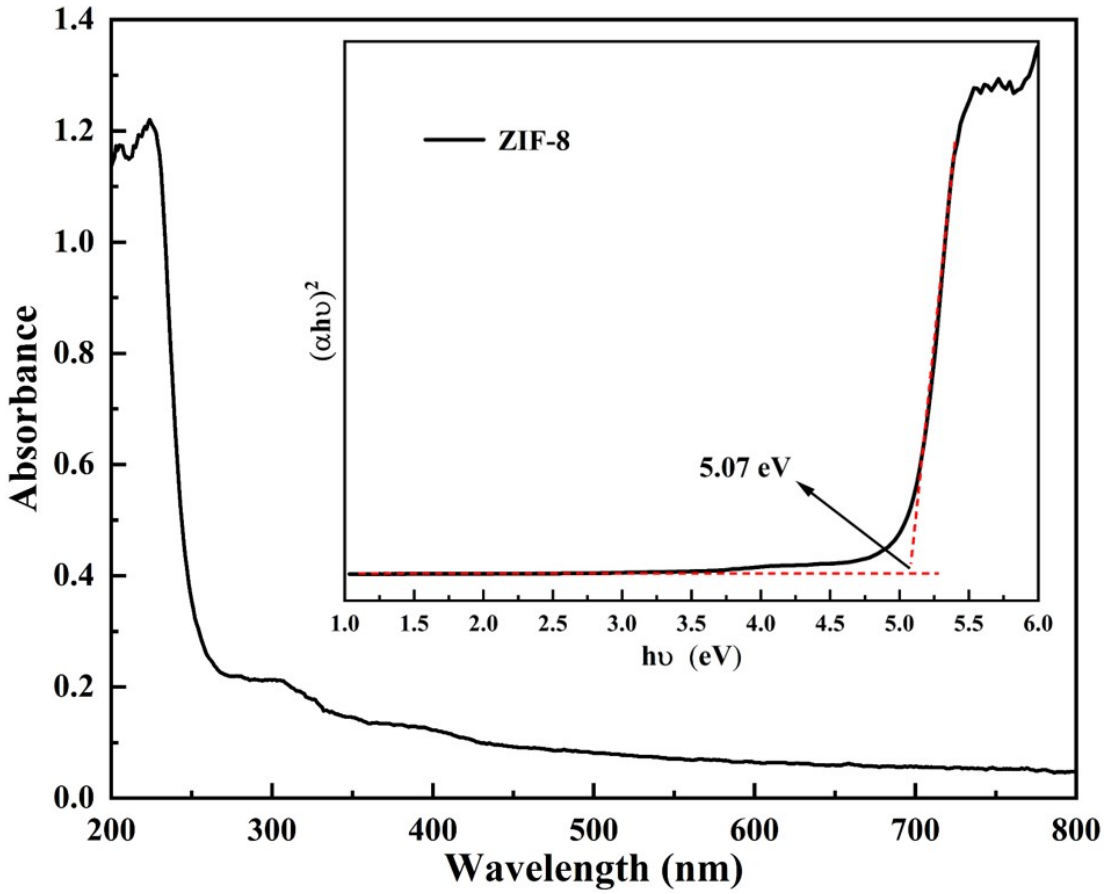

Fig. S2. UV-Vis DRS spectra and Tauc plots of ZIF-8.

The surface properties, area and texture of biomaterials could affect their blood compatibility. Through a simple hemolysis test in vitro, we could judge quickly whether the biomaterials were suitable for clinical treatment. Hemolytic analysis was conducted to analyze the association between Ti plates and RBCs. Our data showed excellent blood compatibility potential of Ti plates (Fig. S3). All samples exhibited slight hemolysis (<5%), which was lower than the critical safe range for biomaterial-induced hemolysis, according to ISO/TR 7406[3].

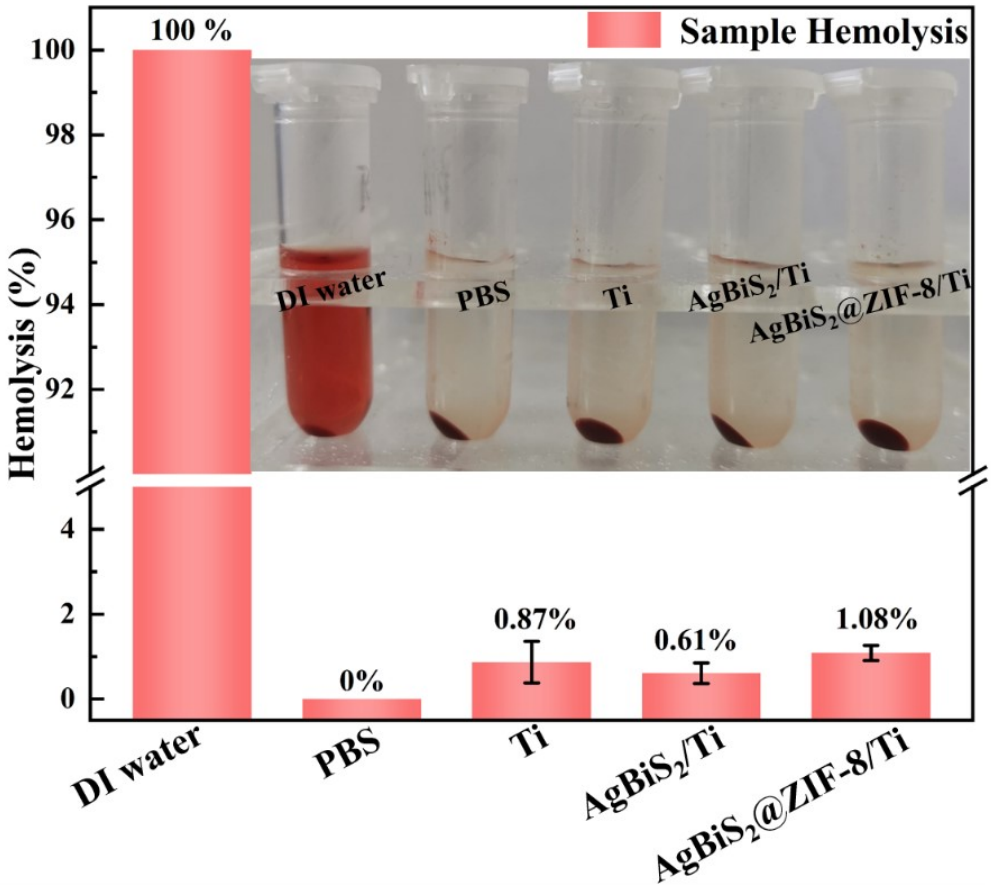

Fig. S3. Hemolysis rates of different samples components for rabbit red blood cells.

References

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