

Electronic Supplementary Information

BiOBr nanoplates@TiO₂ nanowire/carbon fiber cloth as functional water transport network for continuous flow water purification

Yan Mei^a, Yanhui Su^a, Zheng Li^a, Shiqi Bai^a, Mengyu Yuan^a, Lu Li^a, Zheng Yan^a, Jun Wu^{*a} and Lian-Wen Zhu^{*a}

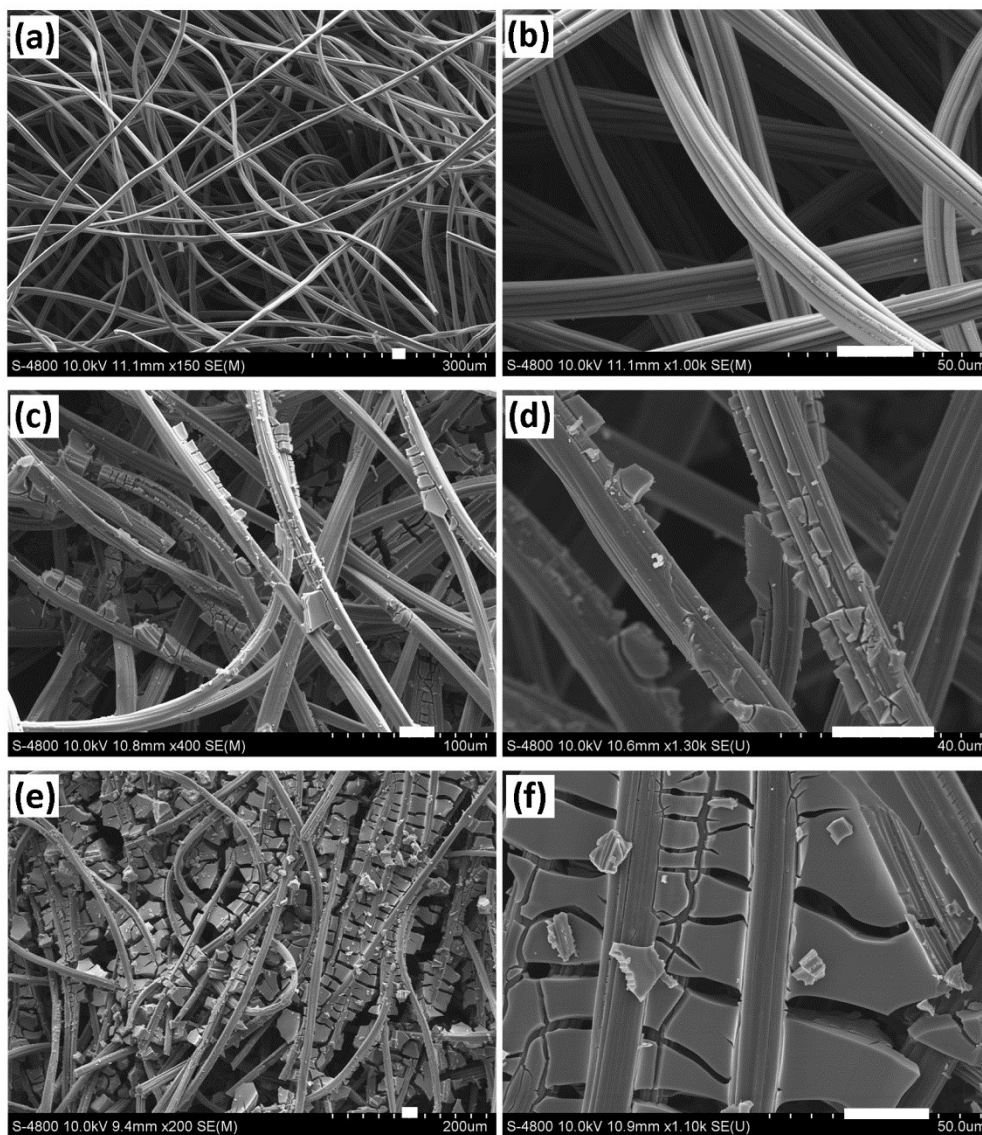


Fig.S1. (a, b) SEM image of CFC before the coating of TiO₂. The surface of the CFC is clean. (c-f) SEM images of CFC coated by TiO₂ through the wetting-hydrolysis process. The surfaces of the CFC are covered by TiO₂ particles. There are a small amount of TiO₂ particles on the surface of the CFC when the wetting-hydrolysis process is not repeated (c and d). A large amount of TiO₂ particles are seen when the wetting-hydrolysis process is repeated three times (e and f). Scale bars: 20 μm.

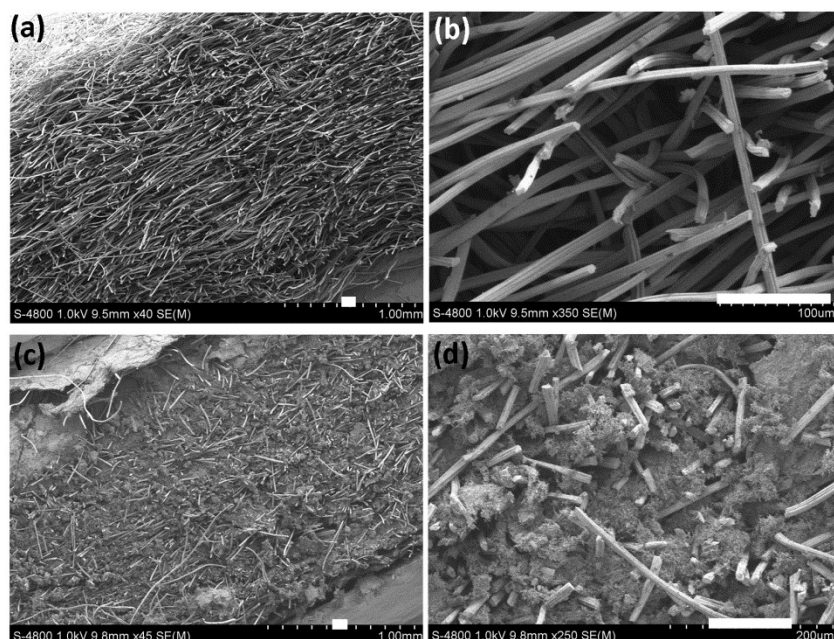


Fig.S2. SEM characterization of the cross section of bare CFC (a, b) and TiO_2/CFC (c, d), which clarifies that TiO_2 nanofibers not only existed on the surface of CFC, but also grew inside CFC. Scale bars: 100 μm .

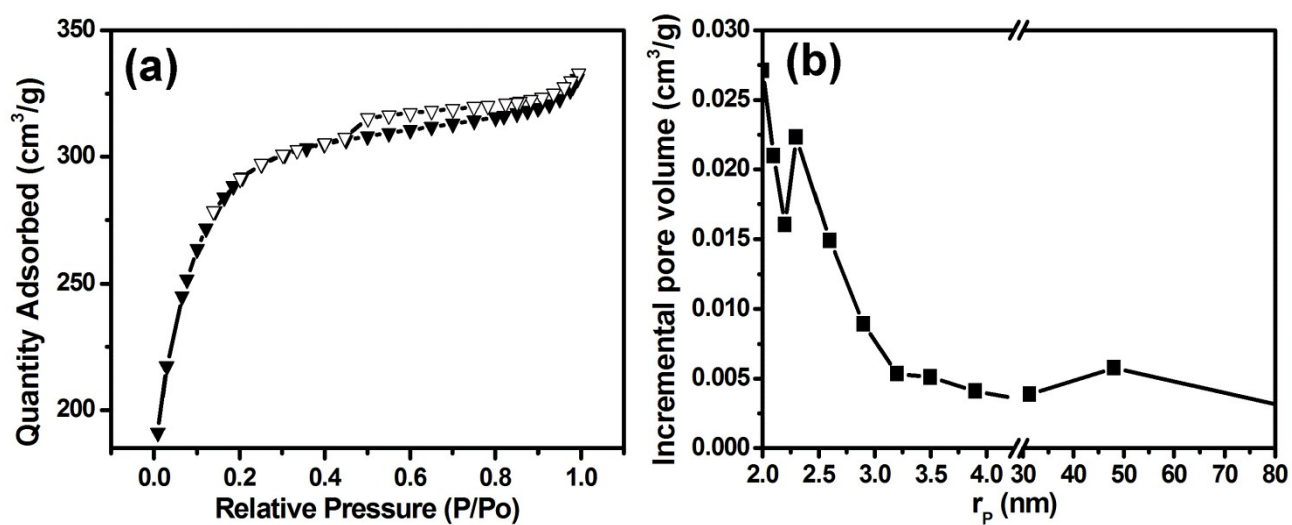


Fig.S3. (a) Nitrogen adsorption–desorption isotherms and (b) the pore-size distribution plots of $\text{BiOBr@TiO}_2/\text{CFC}$ frameworks at 77 K.

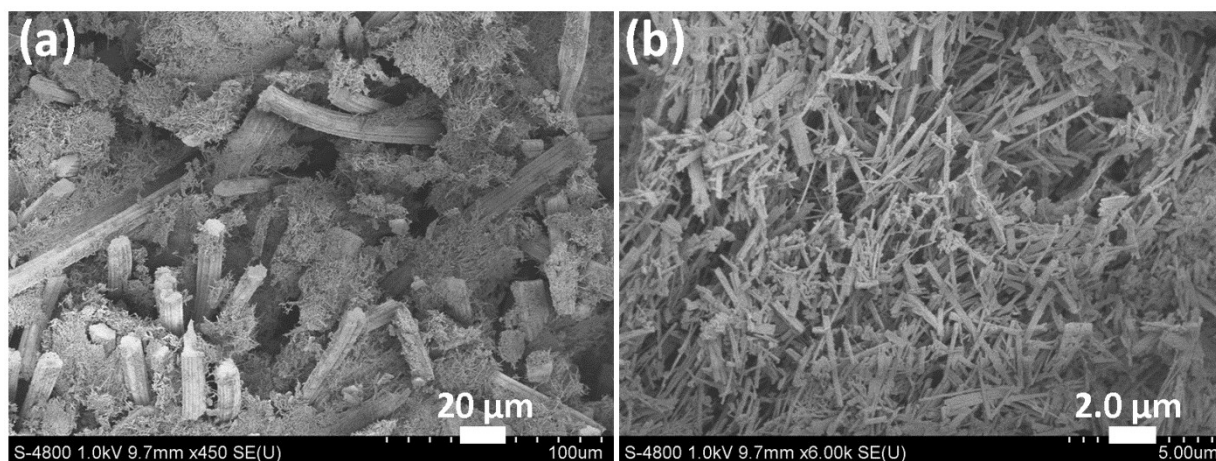


Fig.S4. SEM characterization of the cross section of BiOBr@TiO₂/CFC, which clarifies that the nanoplates are concentrated on the surface layer of the framework but sparse inside the frameworks.

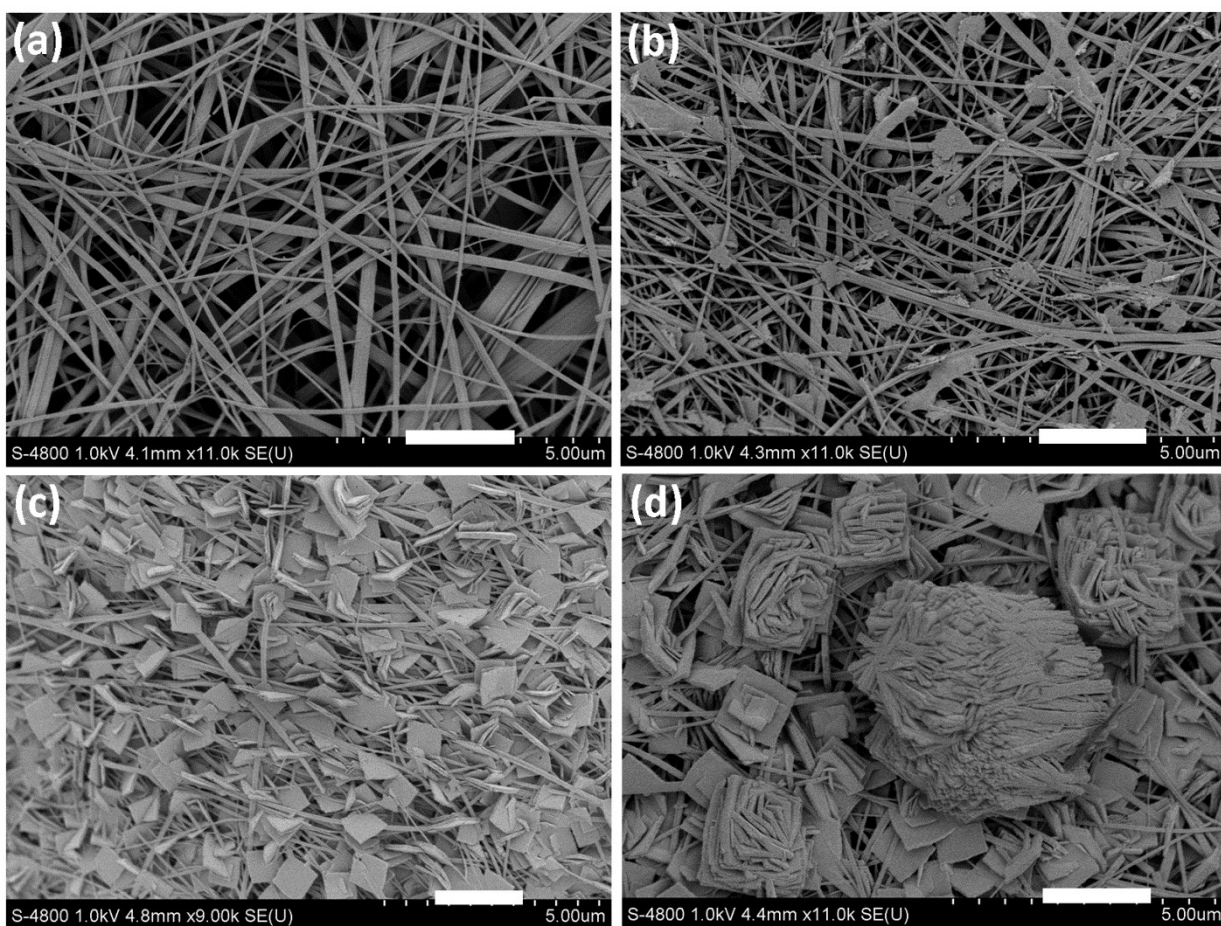


Fig.S5. SEM images of the surface of the hybrid frameworks synthesized by using different amount of Bi(NO₃)₃ and KBr. (a-d) corresponding to 0.005 M, 0.025 M, 0.075 M, and 0.1 M, respectively. Scale bars: 2.0 μm.

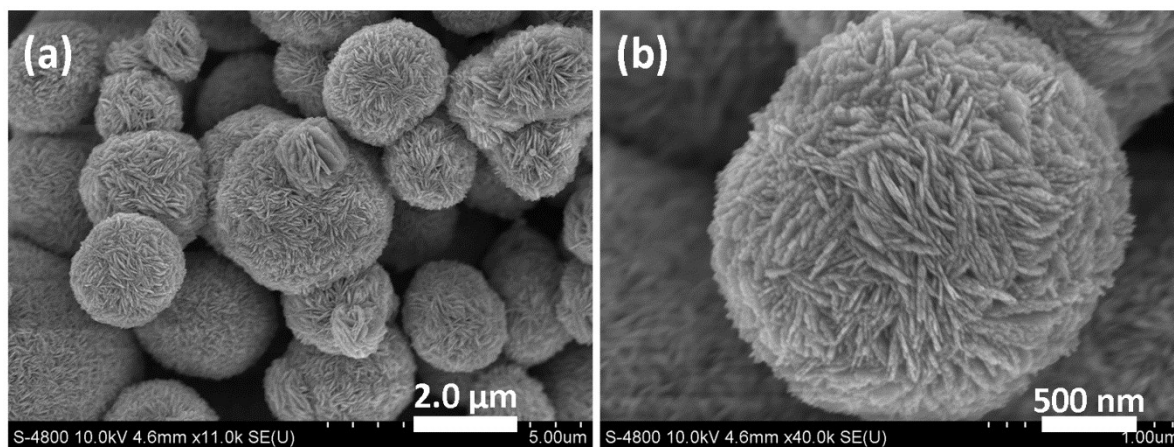


Fig.S6. SEM images of the free particles collected from the solution. The free particles are not composed of discrete nanoplates, but instead of aggregated spherical superstructures. XRD test (Figure 3) reveals that these nanoparticles are completely composed of BiOBr.

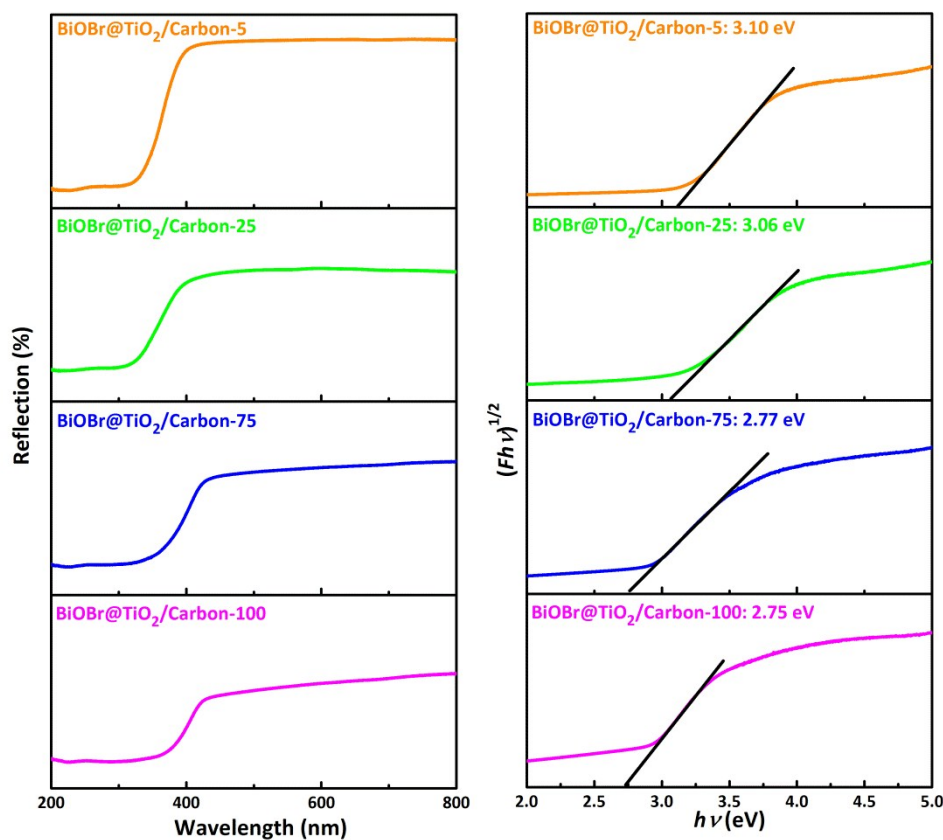


Fig.S7. Left: Diffuse reflection spectra of BiOBr@TiO₂/carbon hybrid framework with different amount of BiOBr. Right: $(Fhv)^{1/2}$ as a function of photon energy ($h\nu$) with linear extrapolations to $(\alpha h\nu)^{1/2} = 0$.