

Electronic Supplementary Information (ESI)

A Sunlight Sensitive Metal-organic Frameworks Film for the Environment-friendly Self-sterilization Applications

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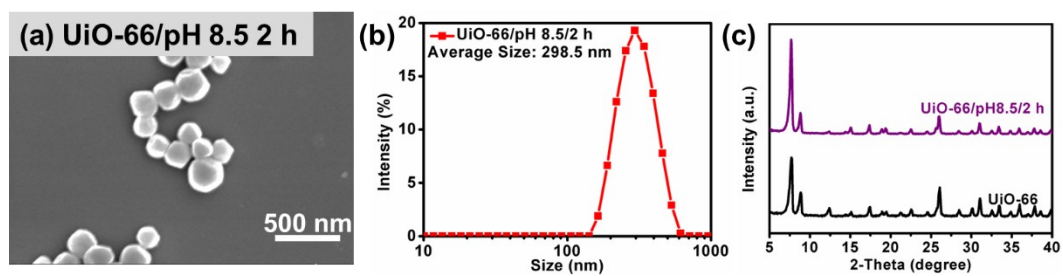


Fig. S1. (a) SEM image and (b) DLS measurement image, and (c) XRD of UiO-66 particles after being immersed in Tris-HCl buffer (pH=8.5) for 2 h.

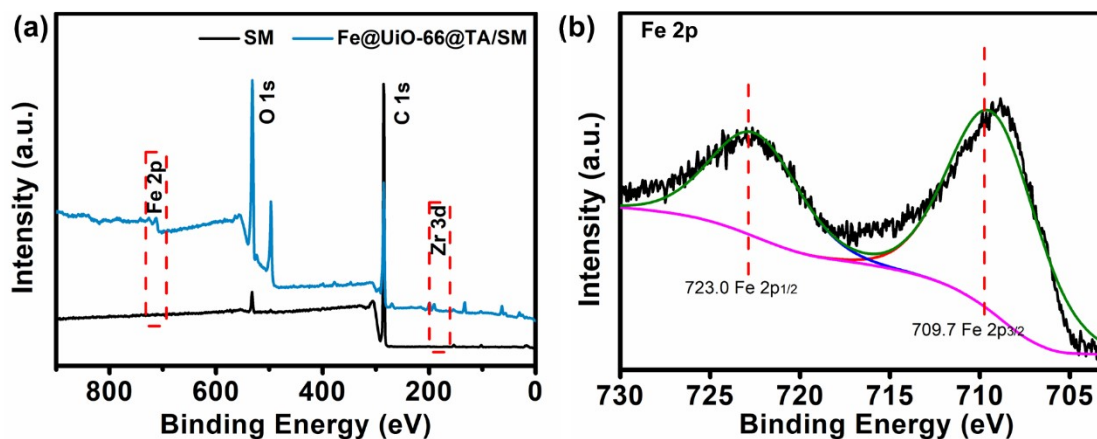


Fig. S2. XPS spectra of SM and Fe@UiO-66@TA/SM: (a) survey spectrum and (b) Fe 2p core-level spectrum of Fe@UiO-66@TA.

Compared to the pristine SM, the Fe@UiO-66@TA/SM exhibited a new peak at 187.7 eV, corresponding to Zr 3d (**Fig. S2a**).¹ Moreover, the Fe 2p_{3/2} signal showed a main peak at ~709.7 eV with a 2p peak separation of ~12–14 eV, consistent with the presence of Fe(III) species (**Fig. S2b**).²

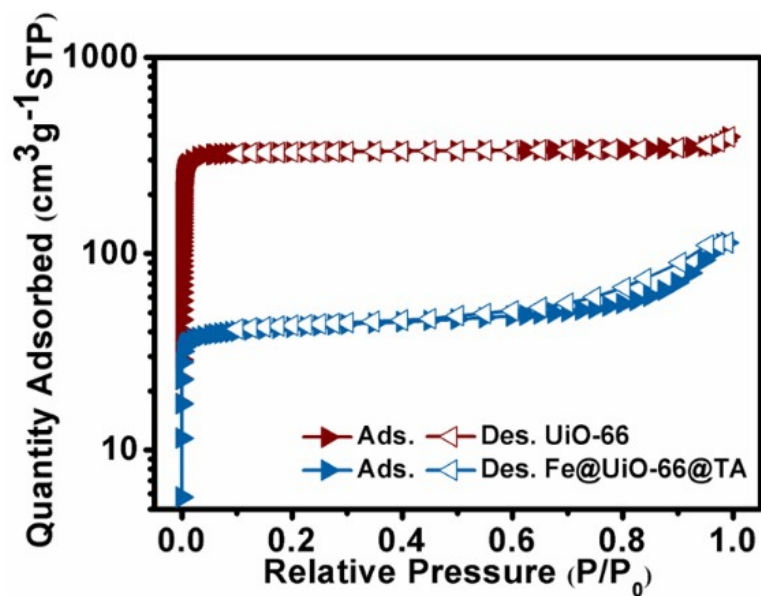


Fig. S3. N₂ adsorption-desorption isotherms of UiO-66 and Fe@UiO-66@TA particles.

Table 1. BET surface area of the UiO-66 and Fe@UiO-66@TA nanoparticles.

Entry	Sample	BET surface area (m ² /g)
1	UiO-66	957.8363 ± 27.7228 m ² /g
2	Fe@UiO-66@TA	128.2058 ± 3.0924 m ² /g

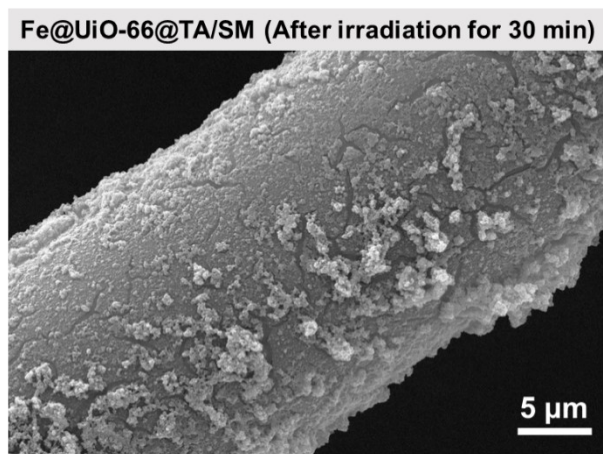


Fig. S4. SEM image of Fe@UiO-66@TA/SM after exposing under simulated sunlight for 30 min.

Reference

1. R. Bariki, D. Majhi, K. Das, A. Behera and B. G. Mishra, Facile synthesis and photocatalytic efficacy of UiO-66/CdIn₂S₄ nanocomposites with flowerlike 3D-microspheres towards aqueous phase decontamination of triclosan and H₂ evolution, *Appl. Catal. B-Environ.*, 2020, **270**, 118882.
2. Hirotaka; Ejima; Md.; Arifur; Rahim; Kwun; Lun; Society, C. J. C. o. M. A. P. o. t. A. C., Coordination-Driven Multistep Assembly of Metal-Polyphenol Films and Capsules. 2014, 26 (4), 1645-1653.