

Supporting Information for

Preparation and characterization of multifunctional nanofibers containing metal–organic frameworks and Cu₂O nanoparticles: particulate matter capture and antibacterial activity

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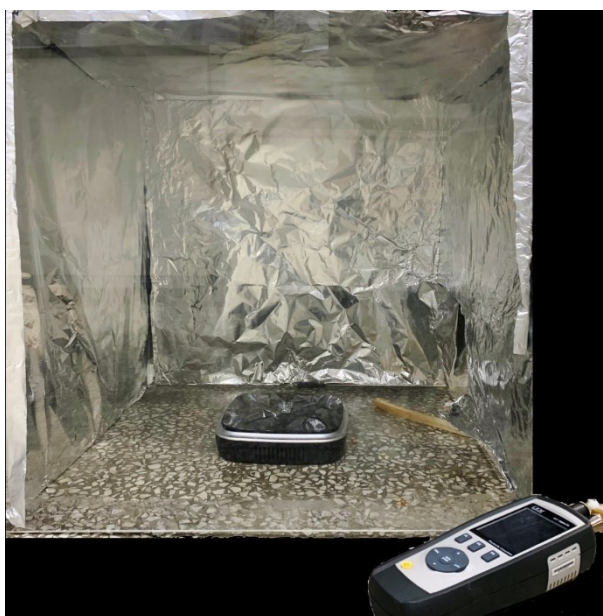


Figure S1. Closed system of particulate matter adsorption image

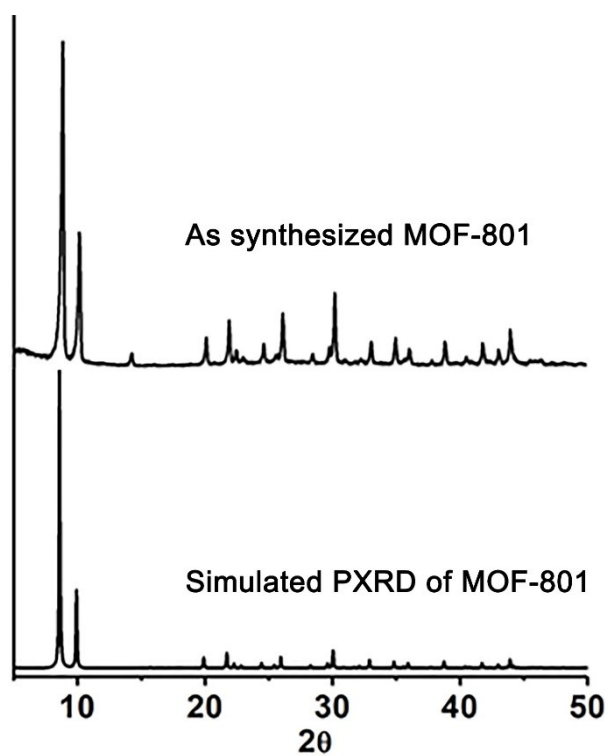


Figure S2. Synthesized MOF-801 and simulated MOF-801 PXRD spectrum comparison

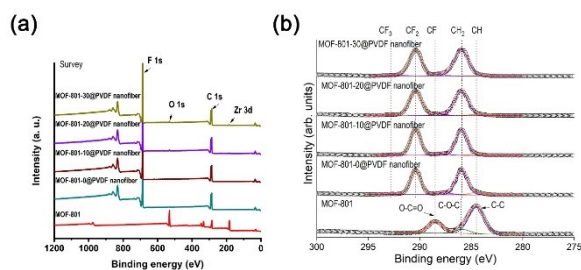


Figure S3. XPS spectra of the MOF-801@PVDF MNF. (a) Survey range and (b) carbon range.

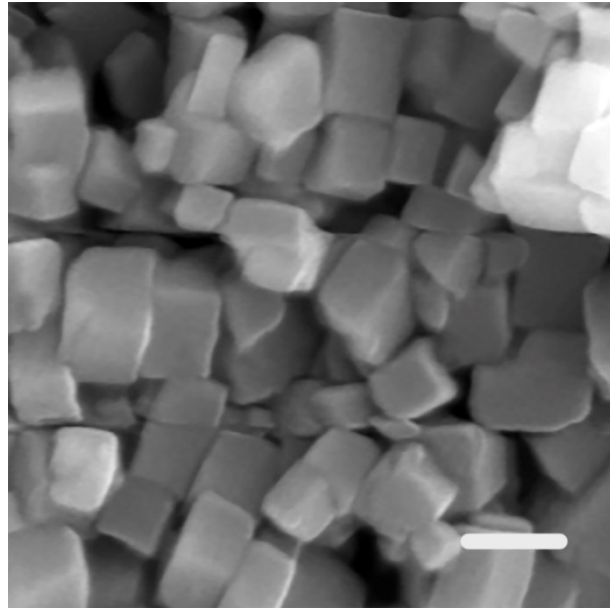


Figure S4. FE-SEM image of cubic Cu_2O NPs. The bar indicates 100 nm.

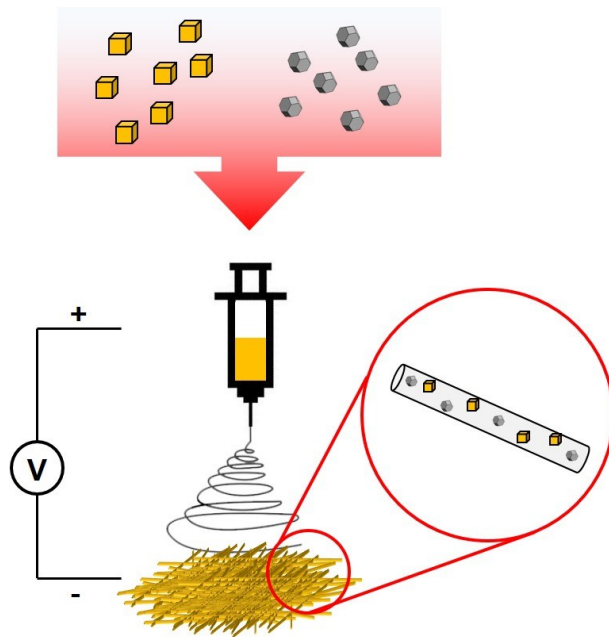


Figure S5. Synthesis of $\text{Cu}_2\text{O}/\text{MOF-801}@PVDF$ MNF via eletrospinning method

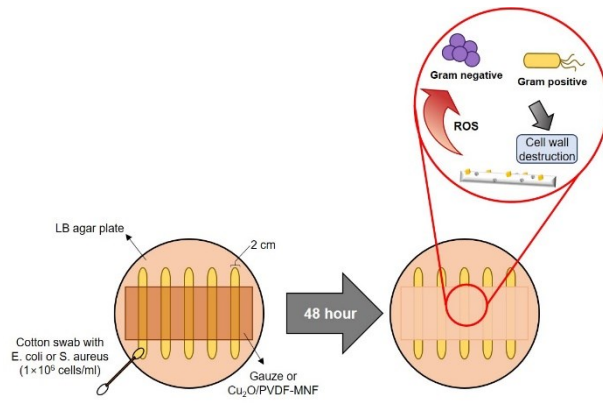


Figure S6. Schematic images of antibacterial process using $\text{Cu}_2\text{O}/\text{MOF-801@PVDF}$ MNF.

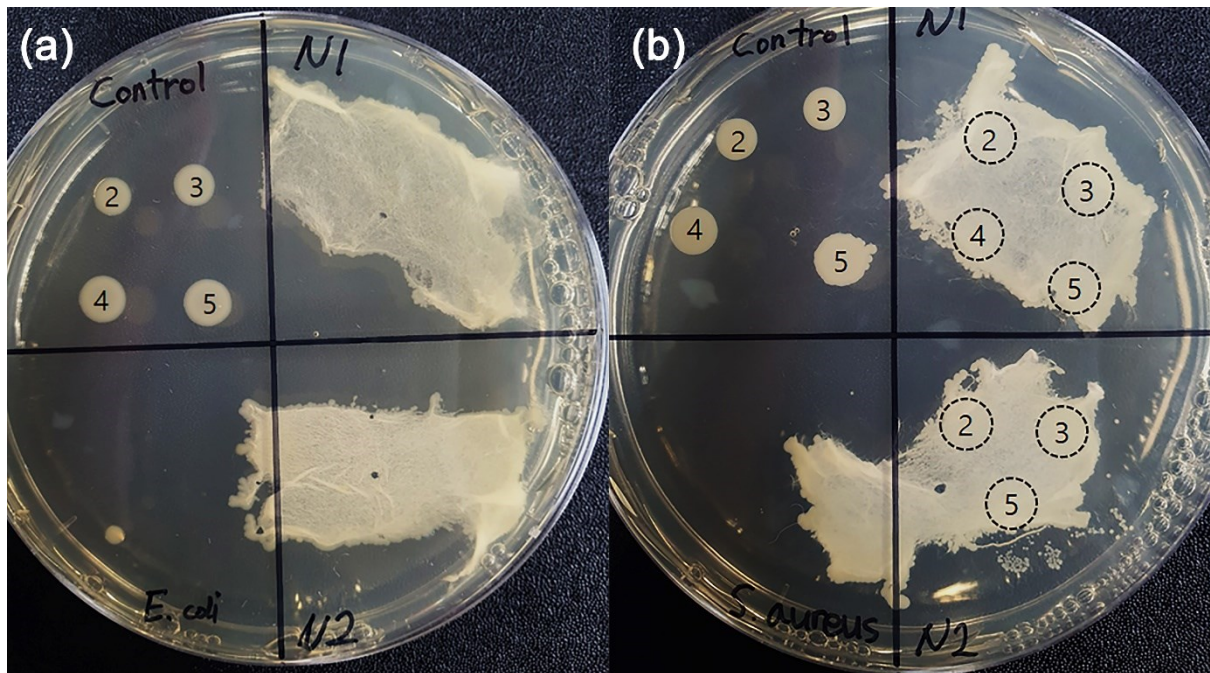
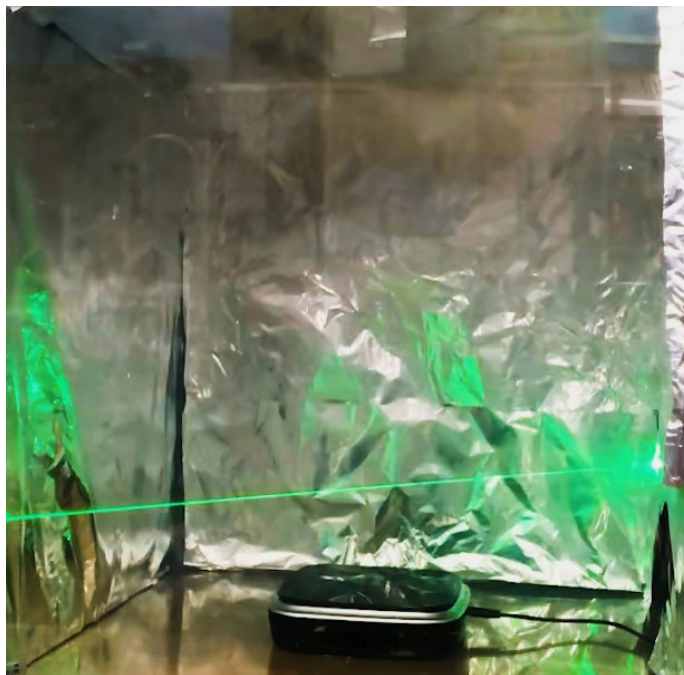


Figure S7. Antibacterial tests using (a) *E. coli* and (b) *S. aureus*.

Table S1. Deconvolution results of C1s spectrum of MOF-801 and MOF-801-X@PVDF MNF

Sample	Peak position (eV)					FWHM (eV)				
	CF ₃	CF ₂	CF	CH ₂	CH	CF ₃	CF ₂	CF	CH ₂	CH
Cu₂O/MOF-801@PVDF	292.11	290.40	287.78	285.94	284.34	1.6	1.09	1.80	1.26	1.38
MOF-801-30	292.16	290.40	288.15	285.96	284.45	1.5	1.36	1.42	1.58	2.10
MOF-801-20	292.96	290.40	288.13	285.96	284.40	1.39	1.38	1.48	1.50	2.10
MOF-801-10	292.61	290.40	287.93	285.96	284.50	1.52	1.15	1.86	1.26	1.86
MOF-801-0	292.60	290.40	287.74	285.94	284.50	1.37	1.17	1.96	1.27	1.53
	O=C-O	O-C-O		C-C		O=C-O	O-C-O		C-C	
MOF-801	288.48	285.86		284.50		1.58	1.70		1.74	



Supplementary Movie 1. Real-time PM_{2.5} and PM₁₀ adsorption process with MOF-801@PVDF nanofilter