Electronic Supplementary Material (ESI) for Environmental Science: Nano.

Water Disinfection by Ag nanoparticle–CuO nanowire Co-modified 3D Copper Foam Nanocomposites in High Flow under Low Voltages

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S1. Photos of electroporation disinfection mould

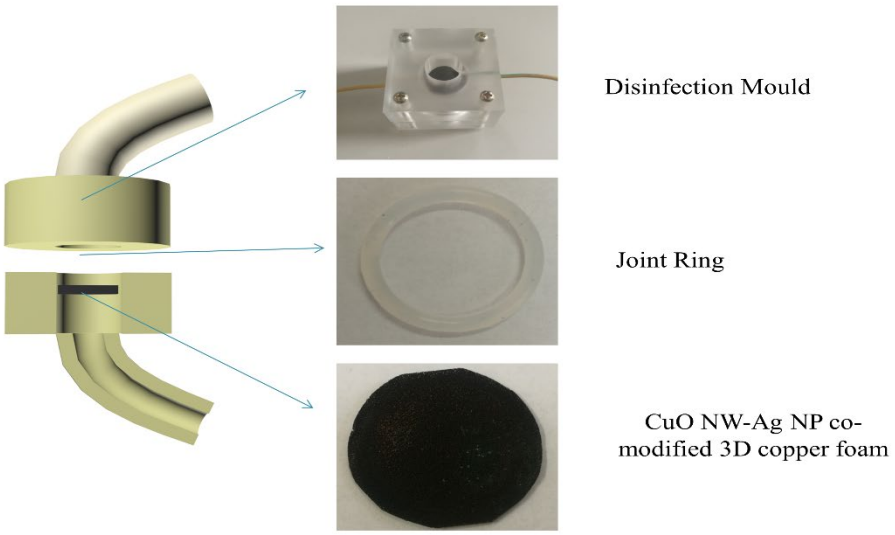

Fig. S1. Photos of electroporation disinfection mould. Left is the mould profile and the component is on the right. Bacteria solution flow in the top tube, penetrate through the specimen, then flow out and be collected.

S2.

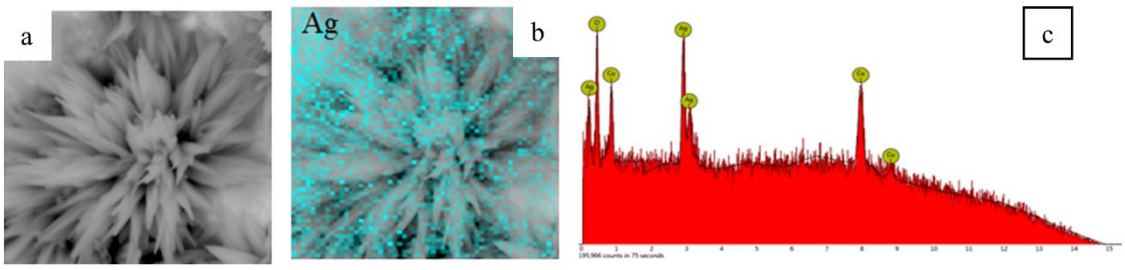

Fig. S2. EDS images of Ag NPs-CuO NWs. (a) shows the flower cluster structure of the CuO nanowires. (b) EDS elemental mapping of the same region, indicates that Ag uniformly distributed on the nanowire. (c) shows the all elemental composition and the detail is in Table S1.

Table S1. Elemental composition of various samples analyzed by EDS

Element Symbol	**Element Name**	**Atomic Conc.**	**Weight Conc.**
O	Oxygen	58.74	23.42
Cu	Copper	31.07	49.20
Ag	Silver	10.19	27.38

S3. Ag ion and Cu ion concentration in the flow test

After sterilization process, analyze the ion concentration of sliver and cuprum in the bacteria solution. All samples were treated by adding nitric acid to 5%. The samples were filtered with 0.2 μm pore size filters before measurement and test the results three times. The detail is in the Table S2.

Table S2. Ion concentration of Ag^{+}, Cu^{2+} in the solution after sterilization process

Ion species	Ag^{+}			Cu^{2+}		
Concentration(ppb)	2.8	4.4	8.9	21.4	12.9	42.6