

1 Electronic Supplementary Information:

2 **Carbon-Nanotube Sponges Enabling High-**  
3 **Efficiency and Reliable Cell Inactivation by**  
4 **Low-Voltage Electroporation**

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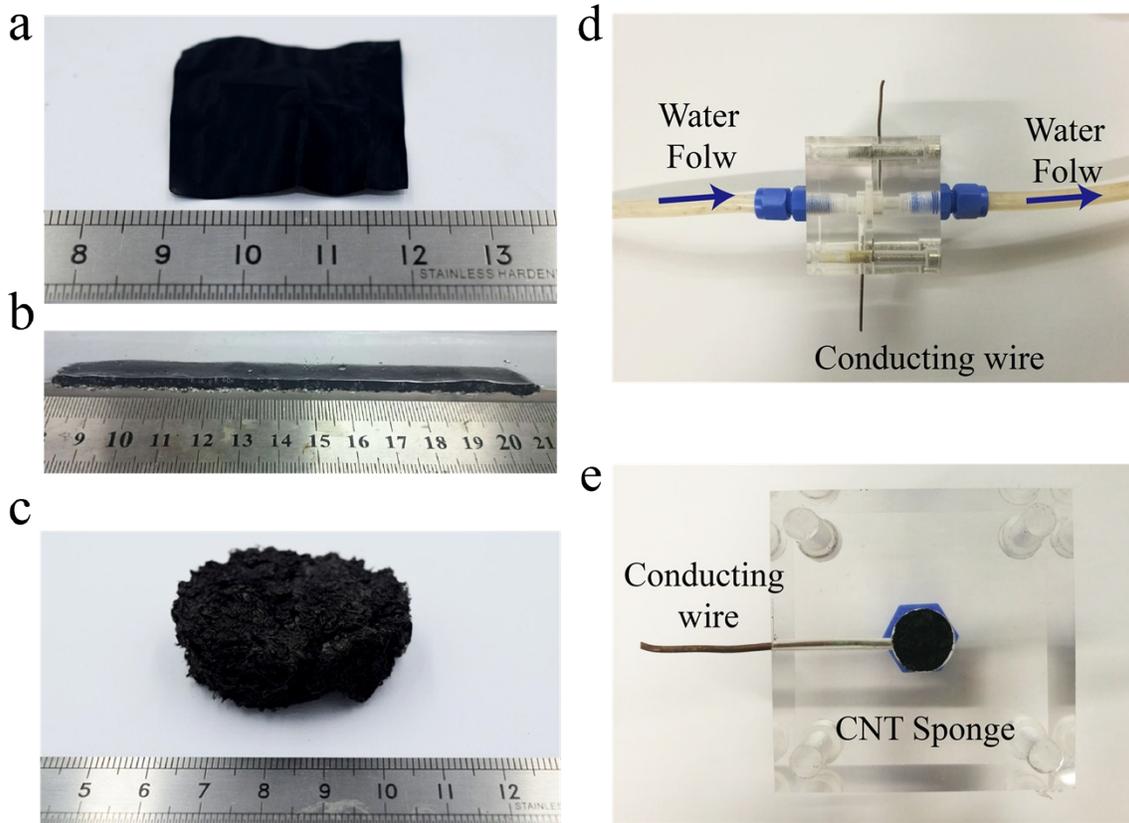
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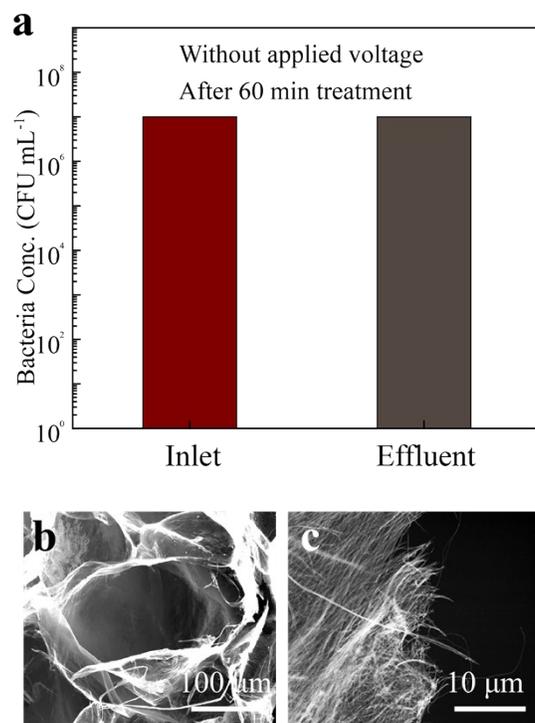
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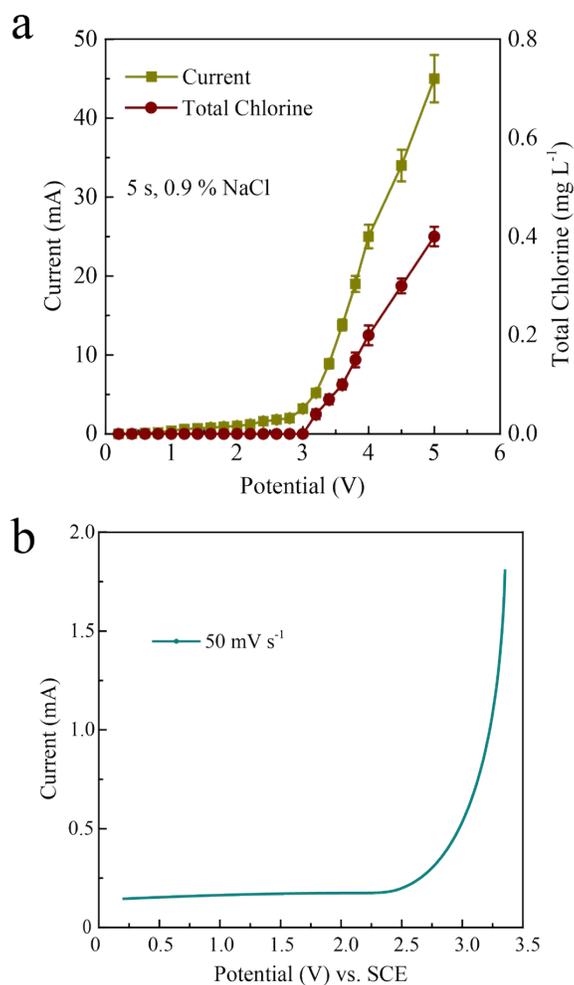
24 **Figure S1.** Photographs of (a) the SACNT array rolled into a unidirectional multilayer film with  
 25 200 layers, (b) the CNT sponge immersed in the piranha solution for 3 days and (c) the prepared  
 26 CNT sponge. (d) Image of the experiment setup showing an EDC device during operation.  
 27 Bacteria in water sample pumped by pump flowed through an EDC device and were inactivated  
 28 by electroporation-disinfection. (e) Image of an opened EDC showing a CNT sponge electrode  
 29 attached with a conducting wire.

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32 **Figure S2.** Investigation of the adsorption phenomenon of CNT sponge. Without applied voltage,  
 33 bacteria solution was flowed through the CNT sponge for 60 min at a fixed contact time (5 s). **(a)**  
 34 The bacteria concentrations of inlet and effluent. **(b and c)** Scanning electron microscope (SEM)  
 35 images shown no cell attachment on the CNT sponge after the bacteria solution flowing through.



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37 **Figure S3.** (a) Electric currents and concentrations of total chlorine in effluent varied with  
 38 applied voltage at a contact time of 5 s. (b) Linear sweep voltammetry test of CNT sponge  
 39 showing the exactly potential when electrolysis occurred was 3.0 V. A three electrode system was  
 40 employed in the solution of 9 g L<sup>-1</sup> NaCl. The CNT sponges were made as the working electrode  
 41 and counter electrode and saturated calomel electrode (SCE) was used as the reference electrode.  
 42 The linear sweep voltammetry test shown that the exactly potential when electrolysis occurred  
 43 was 3.0 V.

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