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**Electro-responsive supramolecular graphene oxide hydrogels for active bacteria adsorption and removal**<sup>1</sup> BIN XUE, YI CAO, WEI WANG, Nanjing Univ — Bacteria are major contaminations in drinking water and healthcare products. Bacteria contamination may cause severe health problems, including food poisoning and diseases. Currently water sterilization and purification methods to remove contaminated bacteria are mainly based on the size-exclusion mechanism. In order to completely remove all bacteria in water, the pore sizes of the membranes or cartilages should be comparable to the size of bacteria, which inevitable leads to high cross-membrane water pressure and slow purification speed. Moreover, the membranes can easily get clogged. Therefore it is highly demanded to develop efficient methods and novel materials for water purification. Recently, Cui and coworker have introduced a bacteria inactivation method with high efficiency and fast purification speed based on a kind of complex materials made of silver nanofibers, carbon nanotubes and cotton, operating in an electric field. With the help of electric field, the bacteria can be efficiently kill when passing through the membrane even the pore sizes are larger than bacteria. Inspired by their work, here we report a proof-of-principle demonstration of bacteria removal using electro-reponsive hydrogels.

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