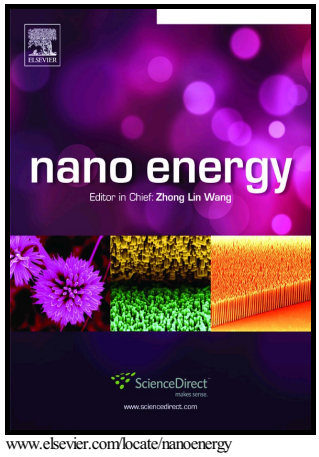

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ABSTRACT

Pathogenic bacteria that give rise to infection have posed major health concerns over the past several decades. In this paper, we propose a self-powered active disinfection system controlled by human motions. The system is mainly composed of a multilayered triboelectric nanogenerator (m-TENG) for the harvesting of biomechanical energy and conductive fabrics as electrodes for the wearable disinfection system. The working principle of the system is based on hybrid effects of H_2O_2 production and electroporation, which provide good disinfection performance toward gram-negative Escherichia coli (*E. coli*) and gram-positive Staphylococcus aureus (*S. aureus*). In addition, we also demonstrate that the presence of gold-coated tellurium nanowires (Au-Te NWs) on the fabrics increased the strength of

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