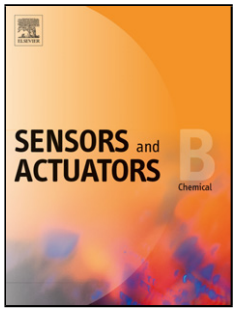

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Fabrication of Ag@TiO_2 electrospinning nanofibrous felts as SERS substrate for direct and sensitive bacterial detection

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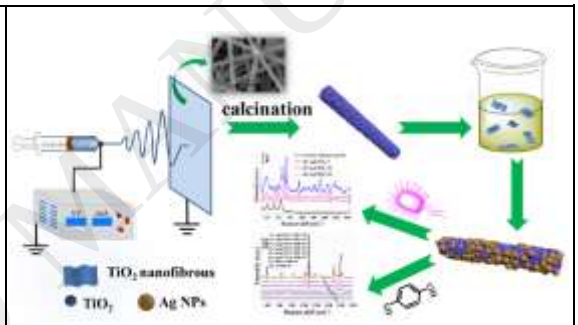
Graphical Abstract

Fabrication of Ag@TiO_2 electrospinning nanofibrous felts as SERS substrate for direct and sensitive bacterial detection	

Highlights

► Ag@TiO_2 nanofibrous felts were fabricated by electrospinning and in suit deposition.

► As SERS substrate, it can detect microorganism directly without aptamer conjugation.

► It also exhibit excellent antibacterial activities with a bacteriostasis rate of 99%.

Abstract

In order to develop a novel method for bacteria detection, Ag@TiO_2 electrospinning Nanofibrous felts have been fabricated by *in situ* decoration of size tunable Ag nanoparticles on anatase TiO_2 nanofibers. The morphologies and structures of the as-prepared Ag@TiO_2 electrospinning nanofibrous felts were characterized by techniques of scanning electron microscopy, energy-dispersive X-ray spectroscopy, transmission electron microscopy, and X-ray diffraction. The result show that Ag NPs