Supplementary material

Loading of Au/Ag bimetallic nanoparticles within and outside of the flexible SiO_2 electrospun nanofibers as highly sensitive, stable, repeatable substrates for versatile and trace SERS detection

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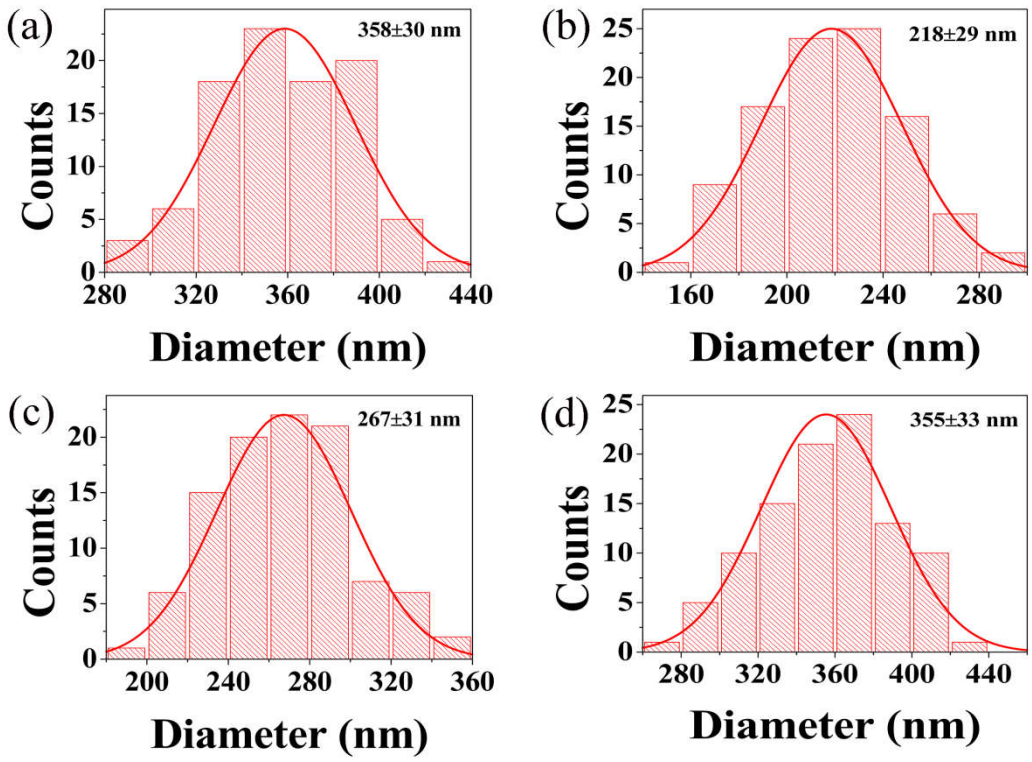

Figure S1. Diameters distribution histograms for nanofibers of SiO_2@Au-20 precursor (a), SiO_2@Au-20 after calcination (b), T-A@SiO_2@Au-20 (c), and Ag@T-A@SiO_2@Au-20 (d).

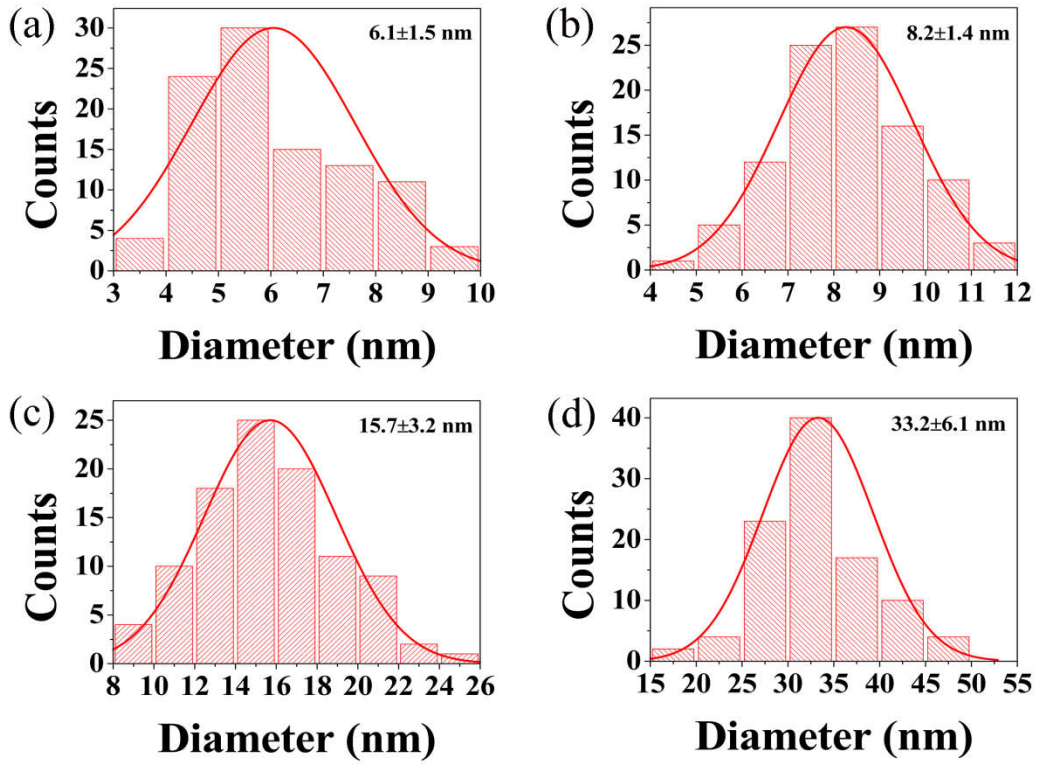

Figure S2. Particles size distribution histograms for Au nanoparticles incorporated into the SiO_2@Au-10 (a), SiO_2@Au-20 (b), SiO_2@Au-30 (c) nanofibers, and histograms for Ag nanoparticles decorated on the surfaces of Ag@T-A@SiO_2@Au-20 nanofibers (d).

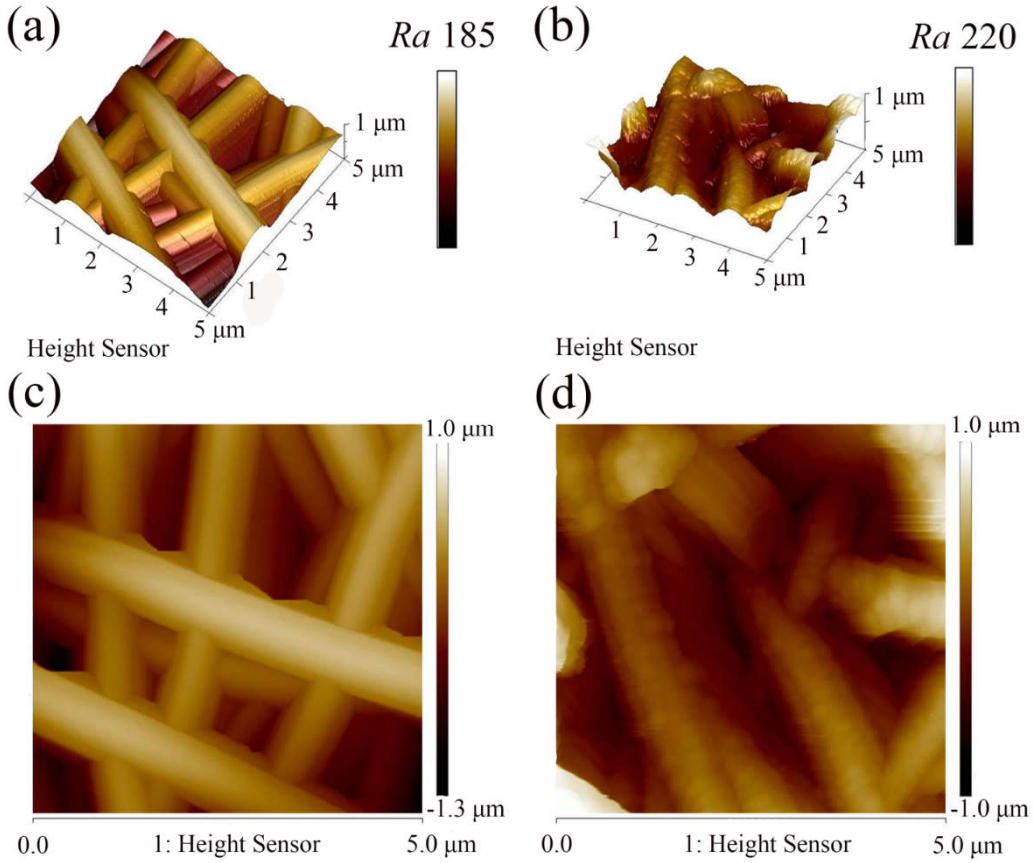

Figure S3. Three-dimensional (3D) and two-dimensional (2D) AFM images of SiO_2@Au-20 (a, c) and Ag@T-A@SiO_2@Au-20 (b, d) electrospun nanofibrous membranes.

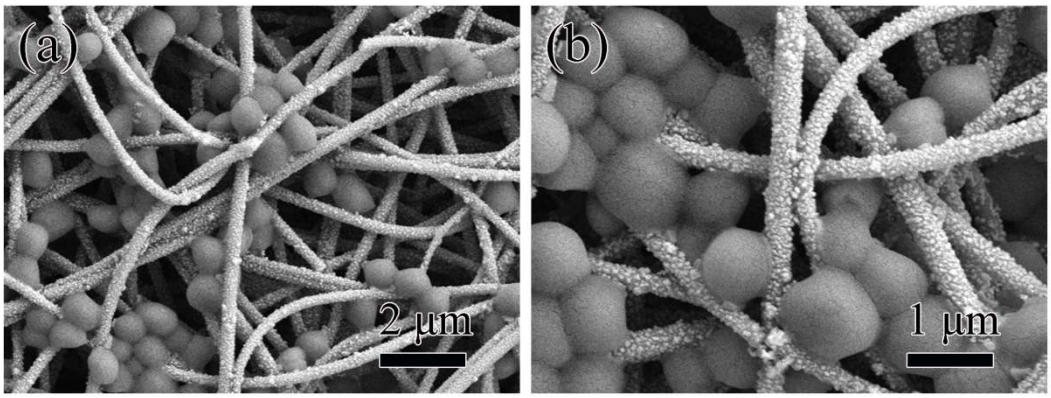

Figure S4. SEM images of different magnifications for *S aureus* attached on the Ag@T-A@SiO_2@Au-20 nanofibrous membranes (a, b).

Table S1. The enhancement factor (EF) of probe molecule on Ag@T-A@SiO_2-20 nanofibrous substrate

	4-MPh	**4-MBA**
Raman Shift (cm^{-1})	1073	1587
I_{NR}	309	1453
I_{SERS}	1680	3396
EF	5.4×10^8	2.3×10^8

Table S2. The enhancement factor (EF) of the reported electrospun SERS substrates

Electrospun SERS Substrates	**Analytes**	**EF**	**References**
TiO_2/Ag	4-mercaptobenzoic acid	5.62×10^6	[3]
ASFPAN-Ag NPs	4-mercaptobenzoic acid	4.8×10^5	[33]
AgNPs/Agar/PAN	p-aminothiophenol	3.1×10^5	[32]