Supporting Information

Plasma-treated electrospun nanofiber as a template for electrostatic assembly of silver nanoparticles

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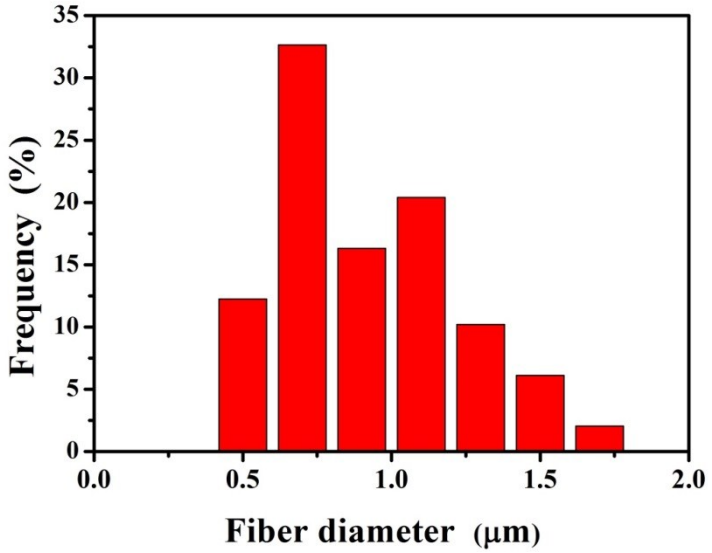

Fig. S1 The diameter distribution of the pristine PLLA electrospun nanofibers.

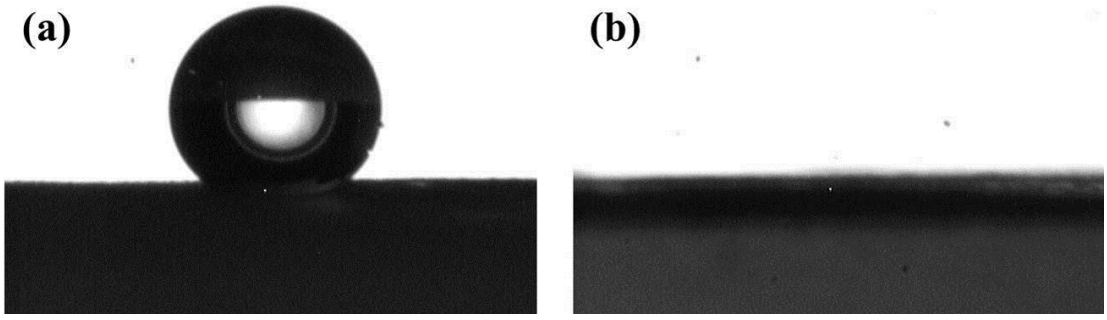

Fig. S2 The wetting behavior of the PLLA electrospun membrane before (a) and after (b) the plasma treatment.

Fig. S3 Photographs of the pristine PLLA electrospun membrane (left), the pristine PLLA electrospun membrane after immersion in Ag NP solution (center) and the pPLLA electrospun membrane after immersion in Ag NP solution (right).

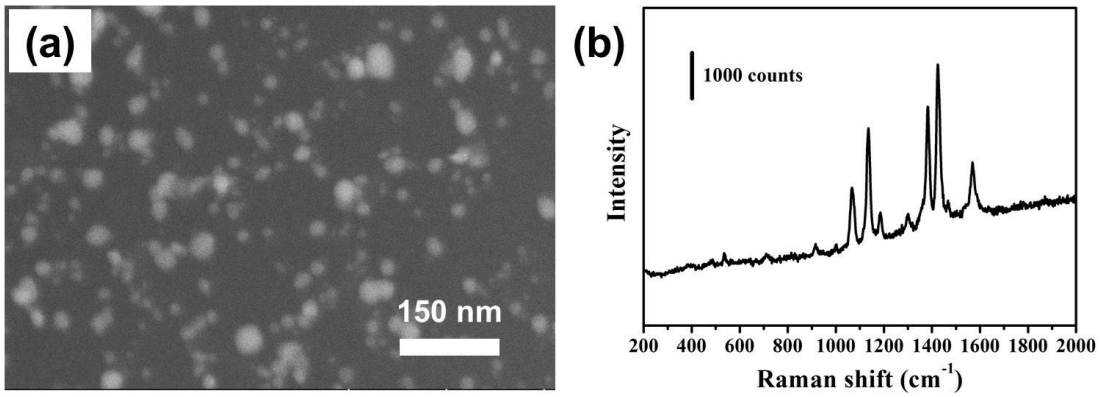

Fig. S4 (a) SEM image of Ag NPs assembled on plasma treated PLLA 2D thin film; (b) SERS spectrum of 0.1 mM 4-ATP molecules collected on the corresponding Ag NPs decorated thin film. The 2D thin film was spin-coated from PLLA solution. The plasma treatment and the assembly procedure are the same as the ones of pPLLA-Ag NPs nanofiber membrane.

Table S1. Comparison of the pPLLA-Ag NPs nanofiber membrane for 4-ATP detection with other materials.

Refs.	Materials	Detection limits of 4-ATP
[1]	Ag NPs assembled on PEI/PVA nanofibers	10^{-8} M
[2]	plate-like Ag NCs gown on nanofibers	10^{-10} M
[3]	Ag NPs assembled on PE nanotubes	10^{-8} M
[4]	Ag NP functionalized glass fiber	5×10^{-8} M
[5]	Ag NPs decorated on 3D TiO_2 film	10^{-7} M
[6]	Ag NCs assembled tapered fiber probe	10^{-7} M
[7]	Au-coated magnetic nanoparticles	10^{-9} M
[8]	Au NPs decorated inverse opal capillary	10^{-9} M
This work	Ag NPs assembled on pPLLA nanofibers	10^{-9} M

References for Table S1:

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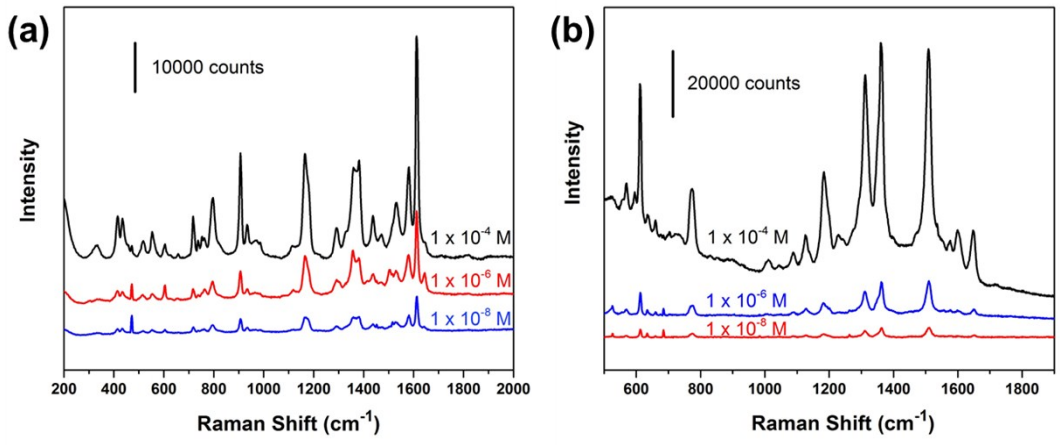

Fig. S5 SERS spectra of different concentrations of crystal violet (a) and rhodamine 6G (b) on the pPLLA-Ag NPs nanofibers.

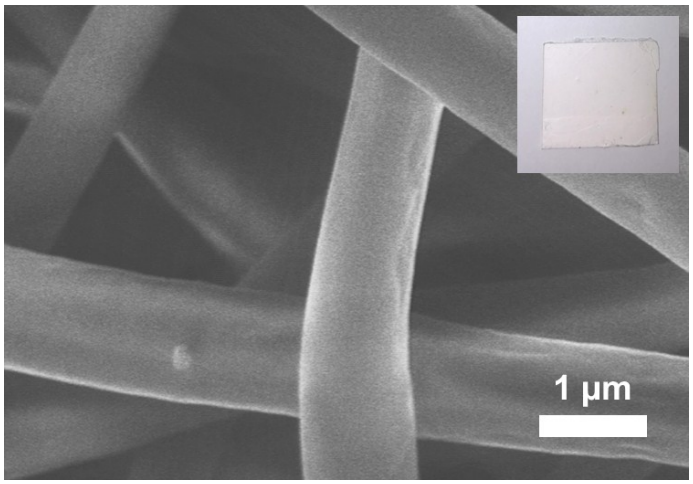

Fig. S6 SEM image and photograph (inset) of the pPLLA electrospun nanofiber membrane after immersion in negative-charged citrate-protected Ag NPs solution.

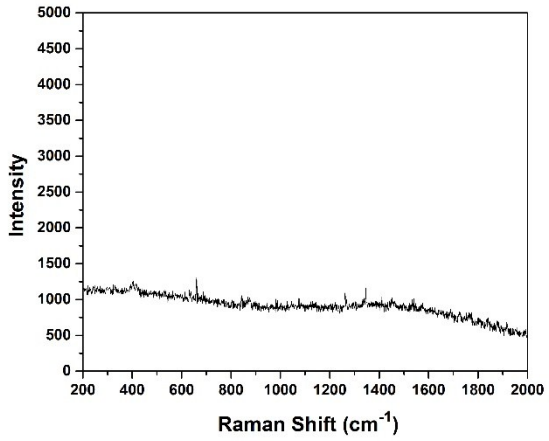

Fig. S7 Raman spectrum of the pPLLA electrospun nanofiber membrane after dipping into 1 mM $AgNO_3$ solution for 24 h. 0.1 mM 4-ATP solution was dropped on the sample and left to dry.