Supporting information

An efficient polymer for producing electrospun transparent conducting films through simple procedures and mild post process

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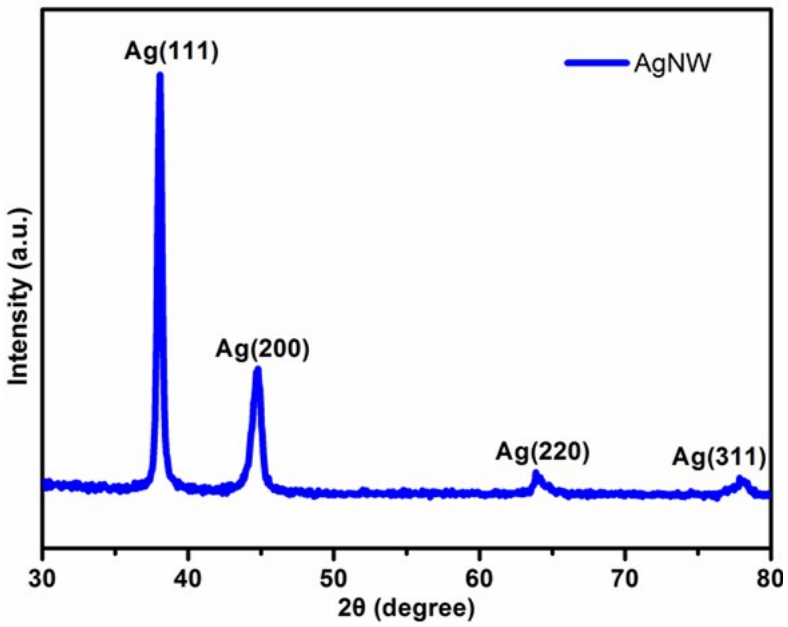

Fig. S1 The XRD pattern of the AgNWs used in our experiments.

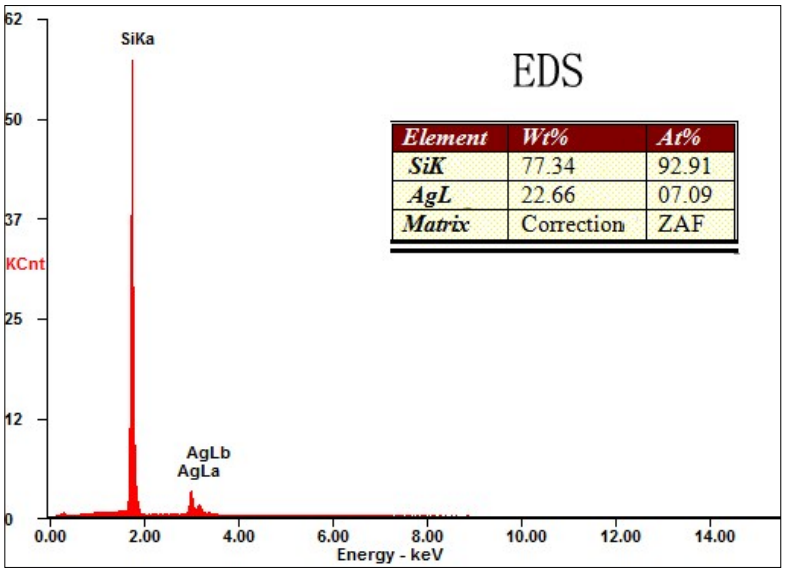

Fig. S2 The EDS analysis of our AgNWs on the silicon substrate.

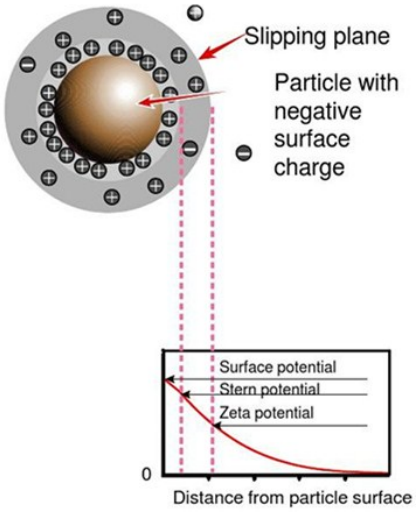

Fig. S3 The illustration for zeta potential.

Firstly, AgNW adsorbs those matters whose charges are opposite to that of AgNW to form compact inner layer (referred to as Stern layer). Then, matters whose charges are opposite to that of Stern layer are absorbed onto the Stern layer to form a loose outer layer. In the outer layer, there is an abstract interface. On one side of the interface which is near the AgNW, matters will move with AgNWs together to form stable entities whose surface charges are the same. But on the other side of the interface which is away from the AgNW, matters are loose. The potential of these entities is called zeta potential (Fig. S3). Obviously, the same surface charges of entities will bring about electrostatic repulsion which can stabilize the AgNWs. And higher zeta potential means higher repulsive force that can bring about higher dispersion stability of AgNWs.

Many kinds of factors can affect zeta potential, such pH value, electrical conductivity of the solution and the concentrations of additives. In these factors, pH value is the most important factor for zeta potential because small variation of pH value may bring about dramatical change of zeta potential.