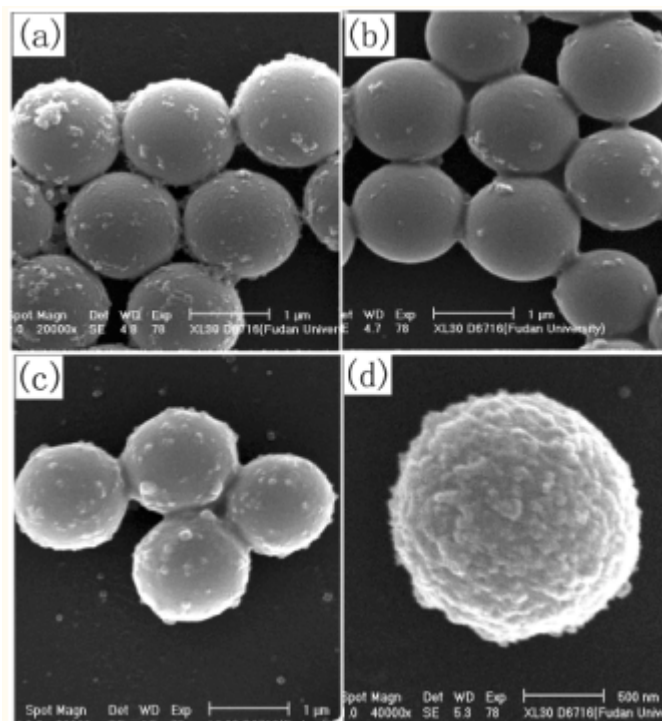


## Supporting Information (B110164C)

### Preparation and characterization of PS spheres:

The negatively charged PS spheres were prepared by soap-free emulsion polymerization. In a typical example, 30g styrene was added in the mixture of 21 g methanol and 44 g deionized water in a 150 ml four-necked rounded-bottomed flask equipped with a mechanical stirrer, a thermometer, a reflux condenser and a nitrogen gas inlet and outlet. Then a solution of 0.15 g potassium persulphate (KPS) in 5 ml water was added under stirring. Under a nitrogen atmosphere, polymerization was carried out at 70 °C for a day. SEM demonstrated the mean size of the resulting samples was *ca.* 1.5  $\mu$  m.



**Fig. 1** SEM micrographs of silver-latex composites obtained at (a) pH 8.0; (b) pH 9.0; (c) pH 4.5 but PS spheres were pre-coated with one layer of cationic PDDA film; and (d) pH 4.5 but PS spheres were coated with two layers of silver nanocrystals.