Supplementary material (ESI) for Journal of Materials Chemistry

Supporting information

One-step synthesis of polypyrrole-coated silver nanocomposite particles and their application as a coloured particulate emulsifier

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Electron diffraction pattern was captured using transmission electron microscope (a JEOL JEM-2000EX).

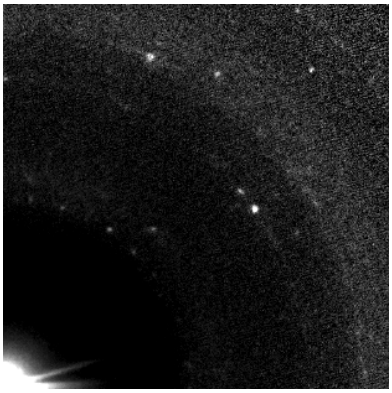

Figure S1. Electron diffraction pattern obtained from PPy-coated Ag nanocomposite particles synthesized by chemical oxidative dispersion polymerization.

Fourier transform infrared (FT-IR) spectroscopy studies were carried out on samples dispersed in KBr discs using a SHIMADZU IRPrestinge-21 (20 scans per spectrum at 4 cm^{-1} resolution).

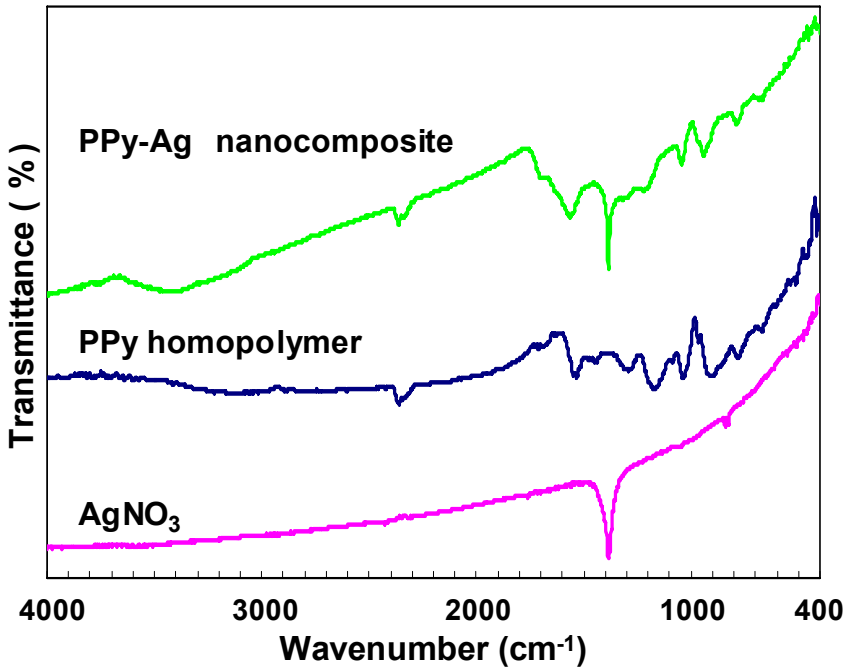

Figure S2. FT-IR spectra of PPy-Ag nanocomposite particles, PPy homopolymer and $AgNO_3$. The PPy homopolymer was prepared by precipitation polymerization of pyrrole with $FeCl_3$ as an oxidant in aqueous medium.

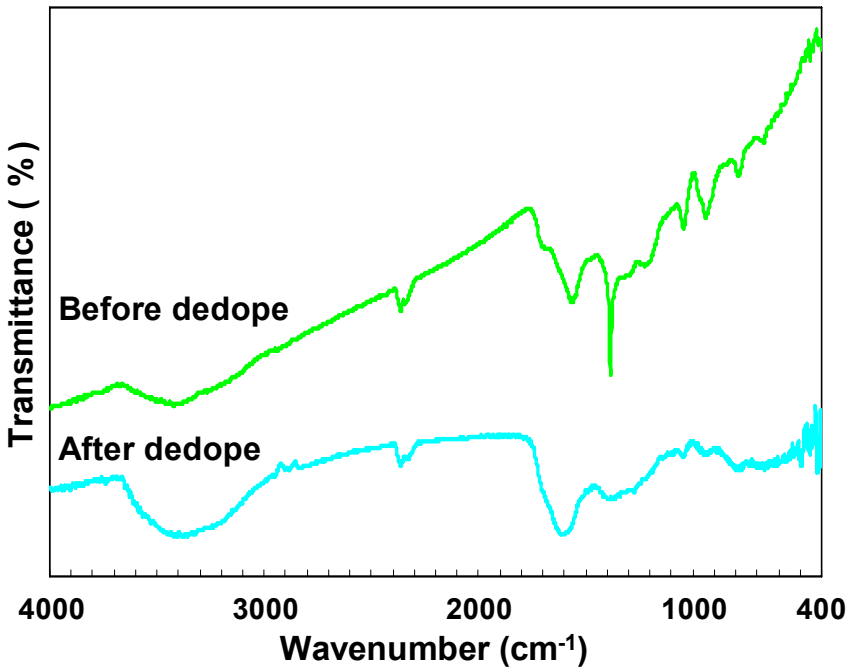

Figure S3. FT-IR spectra of PPy-Ag nanocomposite particles before and after dedope using NaOH at pH 12 for 7 days.

Emulsion type.

Emulsion type was determined by conductivity measurement and drop test. The conductivities of aqueous nanocomposite dispersion and the emulsion immediately after preparation were measured to be 62 and 60 μS cm^{-1}, respectively, using a digital conductivity meter (Hanna model Primo 5). These high conductivities indicated an oil-in-water emulsion. These results were confirmed by the drop test.

Optical Microscopy.

A drop of the diluted emulsion was placed on a microscope slide and viewed using an optical microscope (Motic BA200, Shimadzu) fitted with a digital system (Moticam 2000, Shimadzu).

Acknowledgements

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