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Electronic Supplementary Information

Platinized Spherical Supramolecular Nanoassemblies of a Porphyrin: Facile Synthesis and Excellent Catalytic Recyclability

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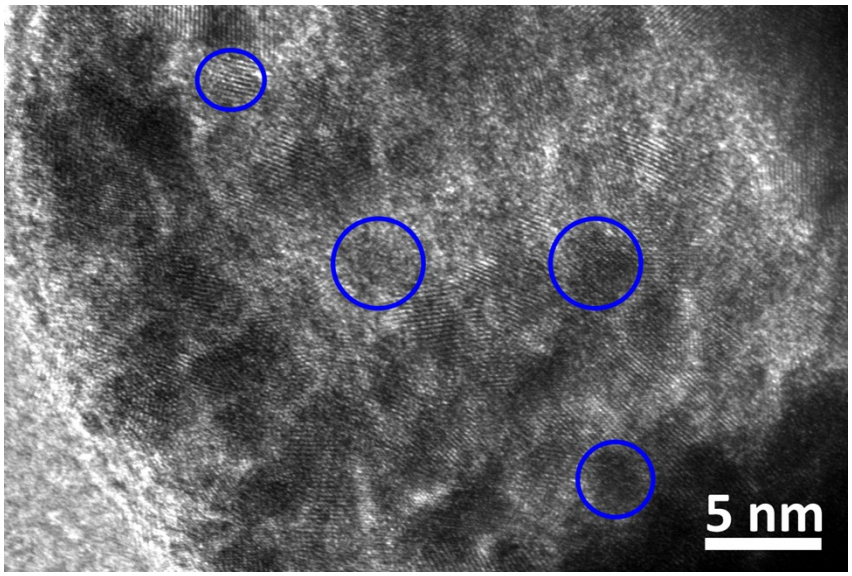

Fig. S1 The high–magnification TEM image of our Pt/PorNanoSp nanocomposites produced by pre–immersing the pristine TPPNH2 nanospheres in a 2 mM aqueous solution of K_2PtCl_4, after which light irradiation is imposed. The blue circles indicate individual Pt nanoparticles with distinct inter–particle boundaries, while other Pt nanospecies overlap each other, leading to blurry boundaries.

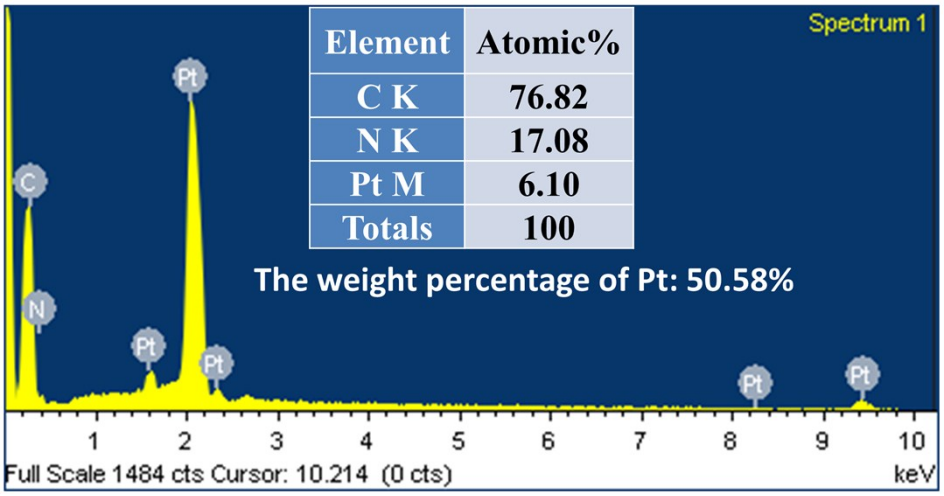

Fig. S2 The SEM–EDX elemental analysis of our Pt/PorNanoSp nanocomposites produced by pre–immersing the pristine TPPNH2 nanospheres in a 2 mM aqueous solution of K_2PtCl_4, after which light irradiation is imposed.

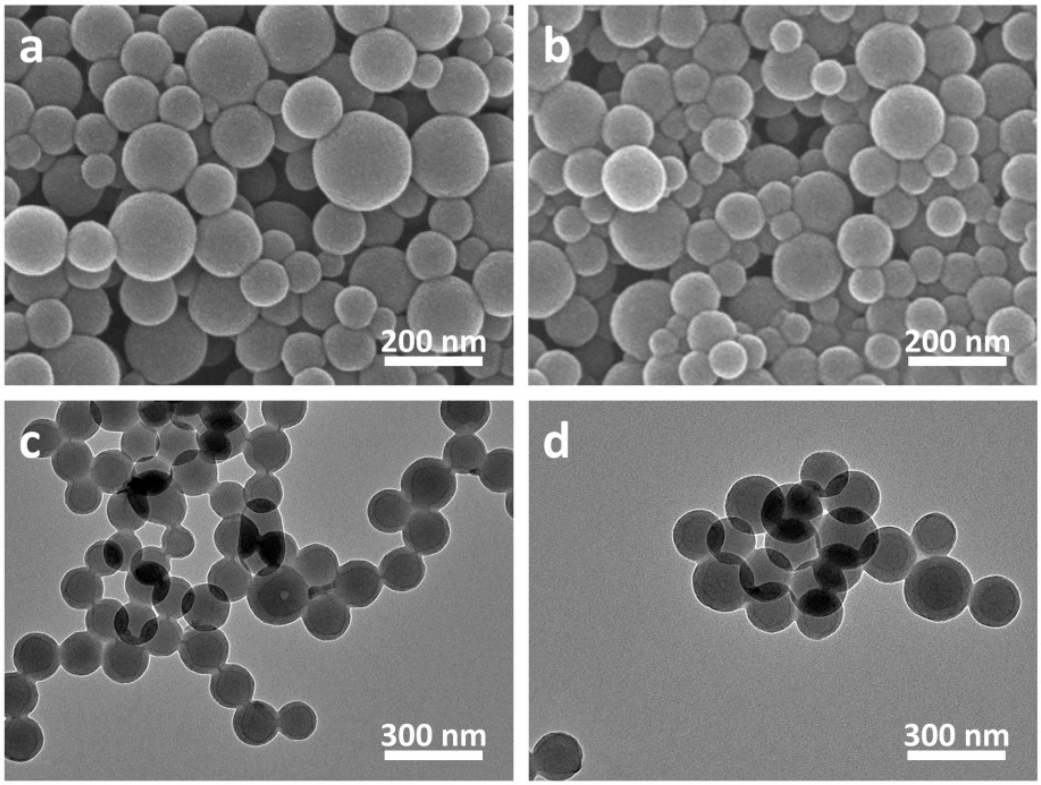

Fig. S3 The typical SEM (a, b) and TEM (c, d) images of the TPPNH2 nanospheres obtained in the absence of ascorbic acid with (a, c) or without (b, d) light irradiations.

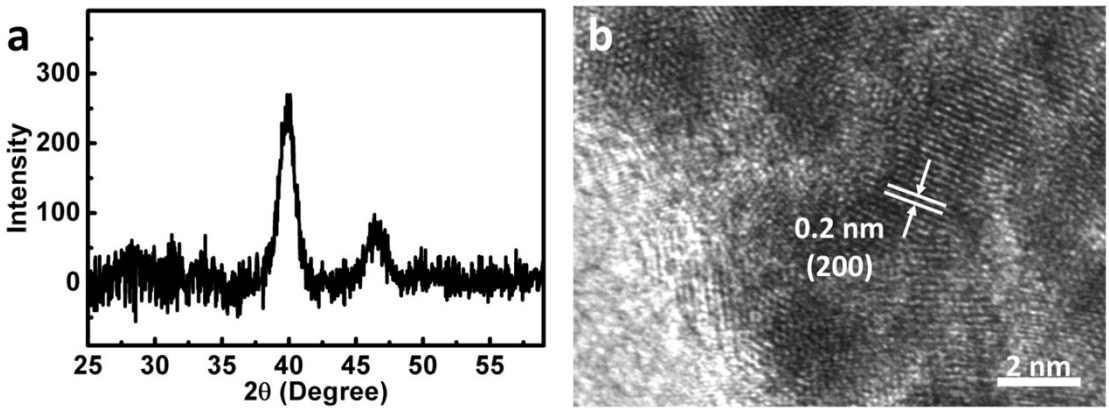

Fig. S4 The PXRD pattern (a) and HRTEM (b) image of our Pt/PorNanoSp nanocomposites, which are produced with light irradiation but without a pre–immersion of the pristine TPPNH2 nanospheres in a 2 mM aqueous solution of K_2PtCl_4.

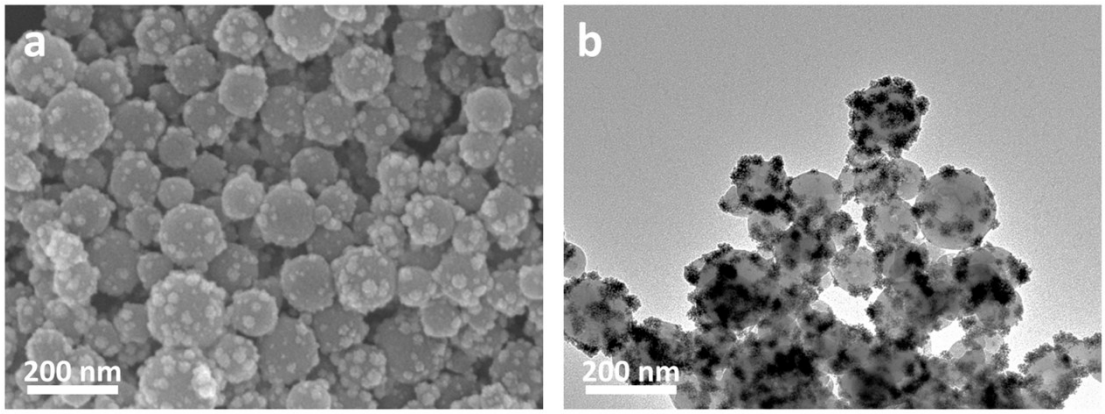

Fig. S5 The typical SEM (a) and TEM (b) images of our Pt/PorNanoSp nanocomposites, which are produced with light irradiation but without a pre–immersion of the pristine TPPNH2 nanospheres in a 2 mM aqueous solution of K_2PtCl_4.

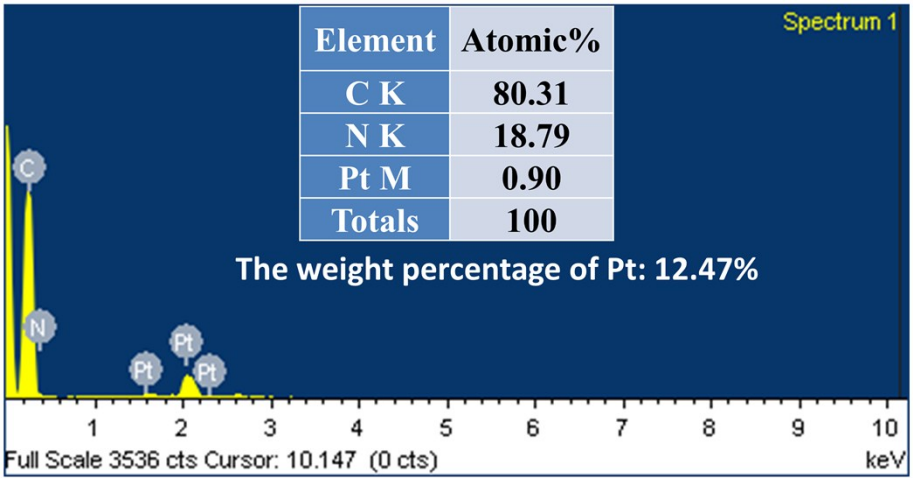

Fig. S6 The SEM–EDX elemental analysis of our Pt/PorNanoSp nanocomposites, which are produced with light irradiation but without a pre–immersion of the pristine TPPNH2 nanospheres in a 2 mM aqueous solution of K_2PtCl_4.

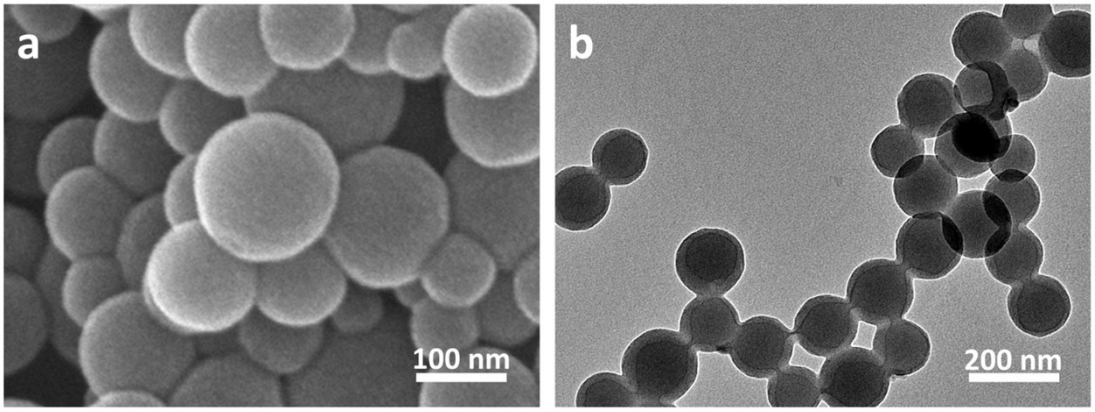

Fig. S7 The typical SEM (a) and TEM (b) images of our TPPNH2 nanospheres, which are treated by a pre–immersion in a 2 mM aqueous solution of K_2PtCl_4 without light irradiation.

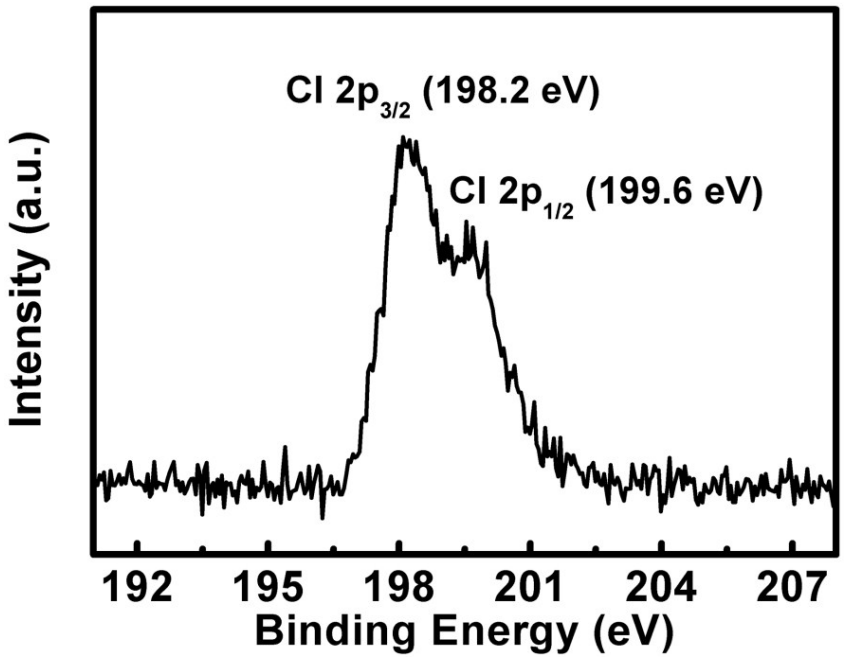

Fig. S8 The XPS spectra of Cl 2p of our TPPNH2 nanospheres, which are treated by a pre–immersion in a 2 mM aqueous solution of K_2PtCl_4 without light irradiation.

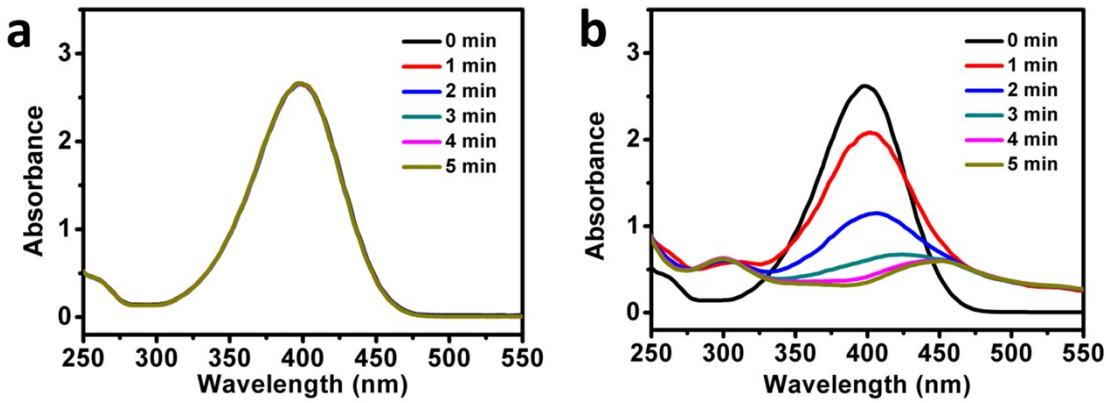

Fig. S9 The catalytic reduction of 4–nitrophenol (4–NP) by $NaBH_4$ monitored by real–time UV–vis spectra. (a) The reaction was conducted without the use of catalysts. (b) The reaction was conducted in the presence of our HU–Pt/PorNanoSp nanocomposites.

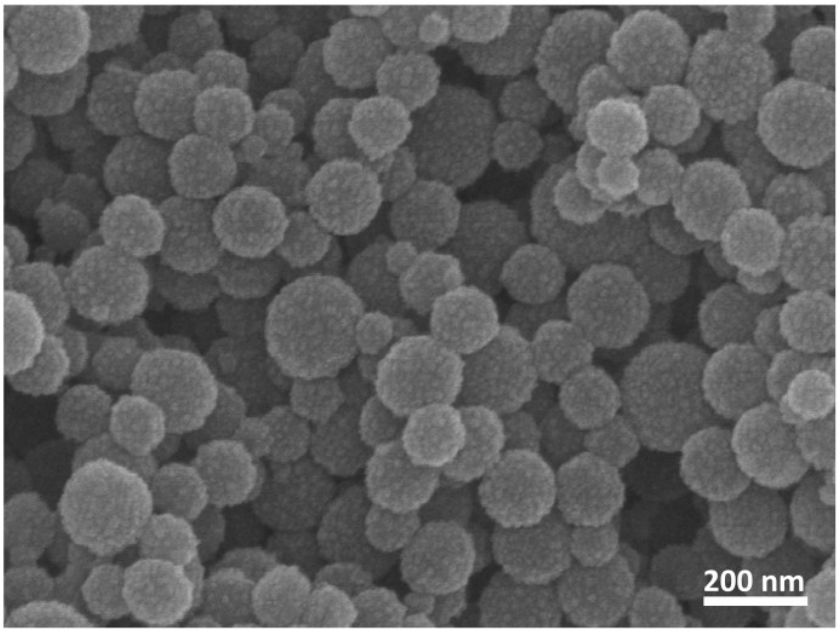

Fig. S10 The SEM image of our HU–Pt/PorNanoSp nanocomposites after their recycling catalytic uses.

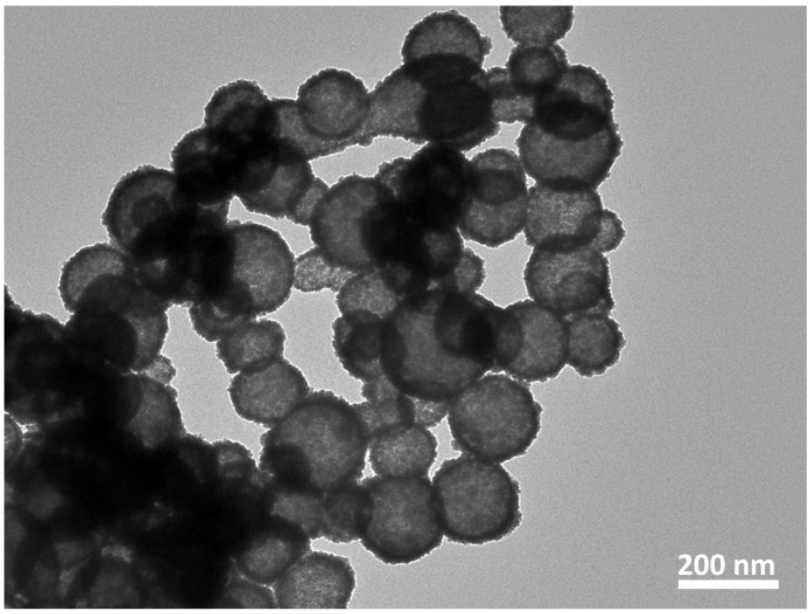

Fig. S11 The TEM image of our HU–Pt/PorNanoSp nanocomposites after their recycling catalytic uses.

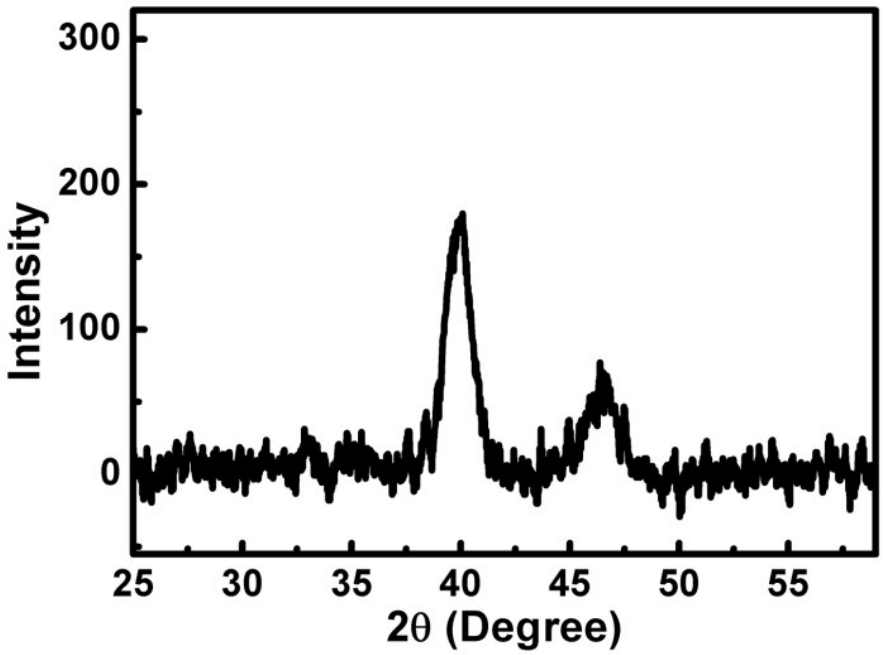

Fig. S12 The PXRD pattern of our HU–Pt/PorNanoSp nanocomposites after their recycling catalytic uses.

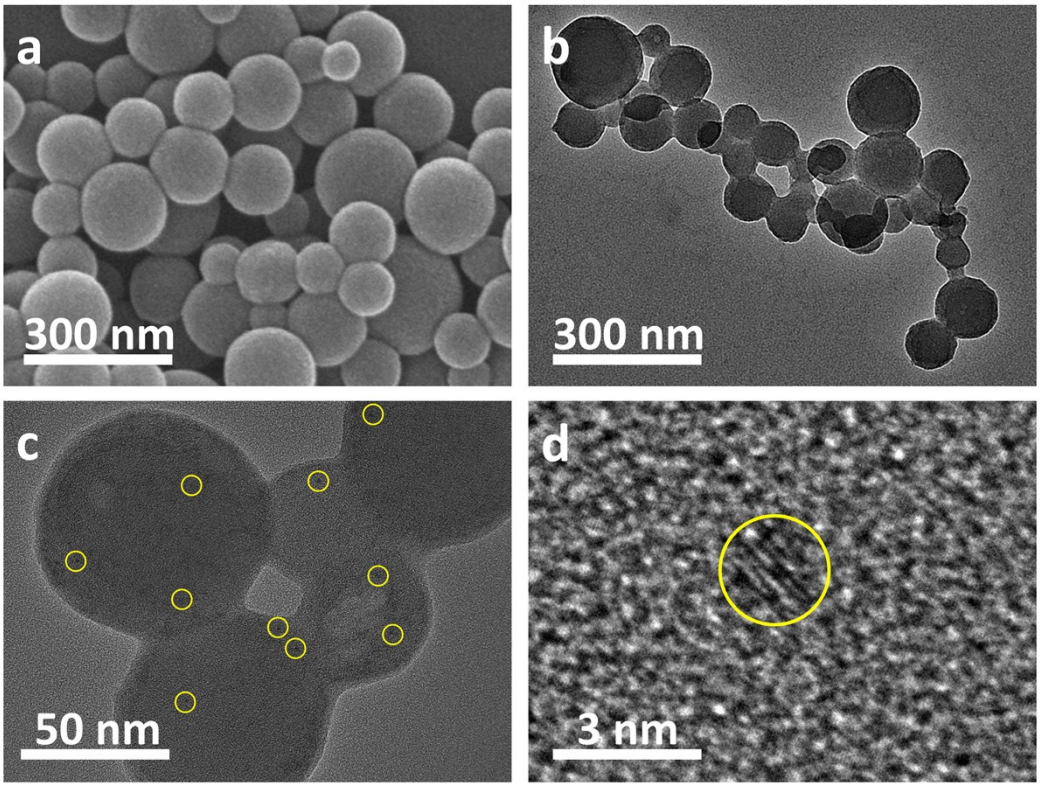

Fig. S13 The SEM (a), low–magnification TEM (b), moderate–magnification TEM (c), and HRTEM images (d) of our SL–Pt/PorNanoSp nanocomposites. The yellow circles in panel (c) and (d) indicate the scatteredly/loosely distributed individual Pt nanoparticles.

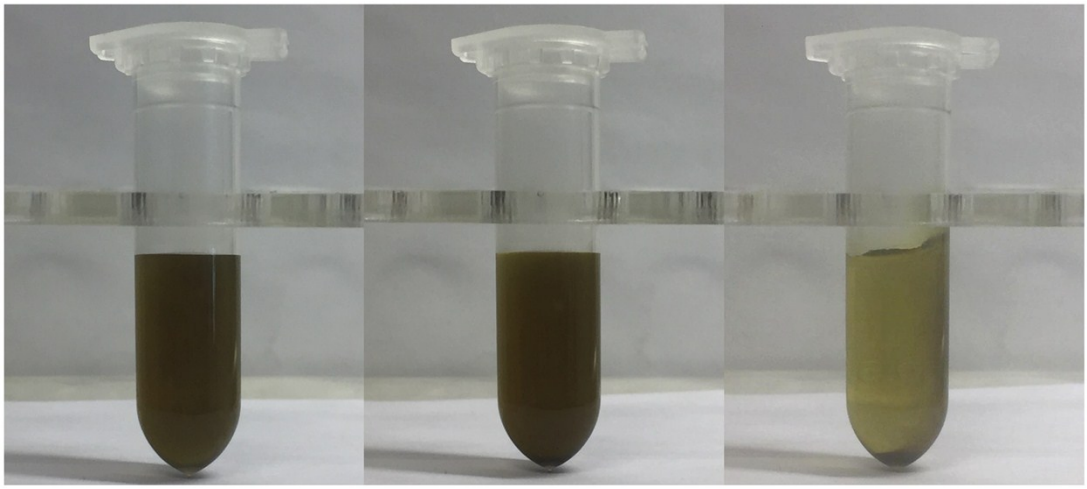

Fig. S14 The digital photograph of the aqueous suspensions of the originally fabricated SL–Pt/PorNanoSp nanocomposites (left panel), and that of the samples after standing for three hours (middle panel), and after a centrifugation treatment (right panel).

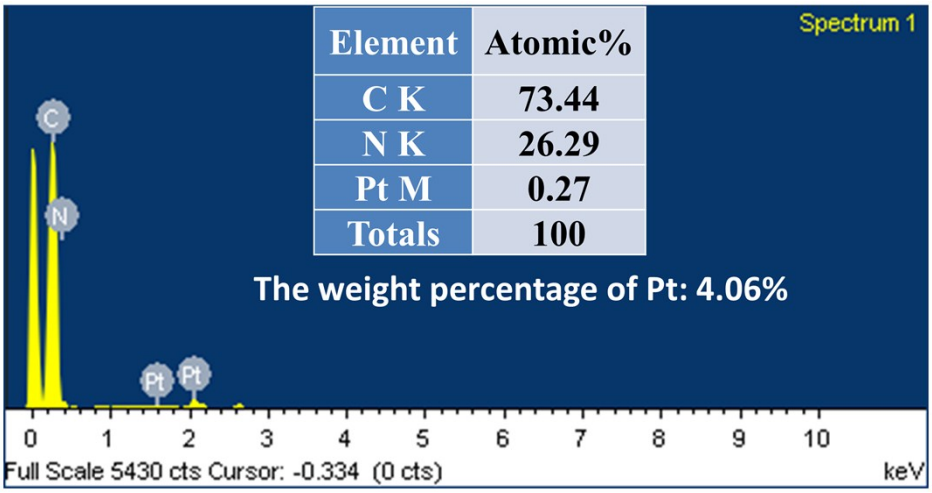

Fig. S15 The SEM–EDX elemental analysis of our SL–Pt/PorNanoSp nanocomposites.